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A STAFF STUDY

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LETTER OF TRANSMITTAL

JUNE 1, 1984.

To the Members of the Joint Economic Committee:

I am pleased to transmit a staff study entitled "Industrial Policy Movement in the United States: Is It the Answer?" The study was prepared by Dr. Robert Premus, Economist, and Dr. Charles H. Bradford, Senior Economist and Assistant Director of the Joint Economic Committee staff.

Over the past three years, there has arisen in the United States an extensive and somewhat emotional debate on the issue of "Industrial Policy," a term with a variety of definitions.

Proponents argue that there has been a serious erosion in the vigor and competitive ability of U.S. industry. The government must undertake some form of centralized planning and resource reallocation to promote industrial development. Opponents argue that U.S. industrial performance is not as bad as proponents believe. What problems do exist can best be handled through macroeconomic policies to encourage capital formation, technological progress, and human resource development, and by promoting competitive markets at home and abroad.

This study draws upon testimony provided by experts who appeared before the Joint Economic Committee at six hearings on industrial policy held in the summer and fall of 1983. It also draws upon the testimony of experts in other Congressional hearings, as well as on voluminous professional literature on the subject.

Congressman Daniel E. Lungren and his Assistant Mark Krotoski reviewed the entire study and made extensive and valuable contributions. Alexis Stungevicius, Greg Ankenman, and Karl snow provided assistance in preparing some of the initial manuscript. The authors were aided by Carole Geagley and Jennifer Kusel who typed the manuscript. The views expressed herein are those of the authors, and do not necessarily represent the views of the Joint Economic Committee or its Members.

Sincerely,

ROGER W. JEPSEN,
Chairman, Joint Economic Committee.

FOREWORD

By Representative Daniel E. Lungren

Advocates of industrial policy claim that the American economy is in deep trouble because it suffers from major structural deficiencies. The emergence of big government, big unions, and big business has allegedly created institutional rigidities that keep resources from flowing to their most productive uses. This is the explanation given by industrial policy advocates for low U.S. productivity growth and what they perceive to be a loss in long-term U.S. competitiveness.

The only way out of the current presumed economic malaise is to extend the level and scope of government into the private sector, according to industrial policy advocates who envision a new role for government in the American economy. Under most industrial policy plans, the power and scope of government would be extended to deal with industry problems. In particular, government loans, loan guarantees, quotas, tariffs, regulatory practices, tax policy, and other legislative actions would be made available to government planners as bargaining chips in restructuring negotiations with industry and unions.

Thus the industrial policy solution is to overcome the perceived institutional gridlock by extending to government the resources and power to package deals with industry and labor. Industry would be given government aid in exchange for promises to undertake structural changes. Labor would be given education, training, and salary guarantees to gain their support for industry plans. Unfortunately, the result would be more government money for big business and big labor and less money for the taxpayers and small entrepreneurs of America. Nevertheless, the industrial policy advocates are confident that a government directed industrial policy would result in a more efficient national industrial structure and higher long-term economic growth.

The overriding conclusion to come out of the several hearings which the Joint Economic Committee held last year, and upon which many of the findings and recommendations in this report are based, was the absence of strong support for any such industrial policy.

Advocates of industrial policy like to talk about achieving consensus. If there was major consensus reached by the panel of economists, academicians and public policy analysts testifying before the Joint Economic Committee—witnesses who spanned the political spectrum—it was, first, against the creation of an industrial bank and, second, opposed to the formulation of some industrial policy council. Because of the scant demonstration of analytic support, it appears that the rationale for an industrial policy is primarily political, rather than economic.

This Report finds that the industrial policy approach suffers from several major contradictions and incurable deficiencies. Although its advocates deny that they wish to impose central planning on the American economy, without central planning industrial policy would be impossible. Industrial policy would vest in a small group of elite decisionmakers the authority to intervene in market allocation decisions. Without a central plan, this group would lack the necessary criteria for making nonmarket decisions.

While the industrial policy advocates claim that a new panel is needed to coordinate government policy, they have never been able to demonstrate—and I doubt that it can be shown—that "the best and the brightest" are in Washington and that they can do a better job of making the economic decisions affecting our lives. Such a presumption on the ability of a select panel also implies that agreement can be reached on policies which would make the major structural changes occurring in the economy less disruptive. Senator William Proxmire, a former chairman and current member of the Joint Economic Committee, was prescient about the results of proposals which take decisions away from the marketplace. He noted in the Congressional Clearinghouse on the Future, "Reindustrialization of America: Choosing an Industrial Strategy for the 80s," October 1, 1980, "Money will go where the political power is; it will go where unions are mobilized, where mayors and governors, representatives and senators have the power to push it. Anybody who thinks that the government resources will be allocated on the basis of merit hasn't been in Washington very long." [1]

Also, the claim of industrial policy advocates that under their scheme the need to "pick winners and losers" would not exist is misleading. The fact that some industries would receive more favorable treatment than others is de facto industrial targeting. The problem with industrial targeting is that it presumes that public officials are capable of making better investment decisions than private entrepreneurs and industrialists.

One of the main problems in creating a highly visible industrial policy board is that it would divert the attention of the business community away from market signals. An institutionalization of the government assistance process would result as businesses would first look to Washington for a solution to their competitive problems. A valuable lesson should be learned from the many entitlement programs enacted by Congress. There is little doubt that the objectives of the legislation creating many of these programs are worthy. However, in trying to address the deficit situation, the Congress has seen again that once the government giveth, it is more difficult to take any of it back. A major point which the advocates of industrial policy fail to address is the issue of how to withdraw public support once it is no longer needed or desired. By institutionalizing the process of government assistance, long-term investment decisions would become increasingly responsive to political conditions. Moreover, the concentration of political and economic power would inevitably lead to waste, corruption, and abuses. The experience of the Reconstruction Finance Corporation offers ample evidence to suggest that corruption and waste would occur under a new industrial policy.

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[1] From the transcript of a seminar held by the Congressional Clearinghouse on the Future, Washington, D.C., October 1, 1980.

Many industrial policy advocates are opposed to the creation of an industrial development bank. They feel that by opposing the industrial development bank they can overcome most of the political objections to industrial policy. This is an exercise in self delusion and it may actually make matters worse. Without a government approved industrial development bank, the industrial policy board would focus its efforts on the use of its other powers. Tariff protection and the use of quotas to shield American industries from foreign competition would intensify. Also, domestic pressure to make specific tax concessions to the targeted industries would mount. Regulatory relief and government spending on programs to benefit specific industries would also probably increase. The main point is that an innocuous industrial policy cannot be had merely by deleting the proposed industrial development bank.

Perhaps the most serious flaw of industrial policy is its failure to understand the source of U.S. industrial problems. Industrial policy advocates attribute the comparatively low U.S. productivity and economic growth in the post-World War II period to structural deficiencies in the U.S. economy. Yet, an examination of changes in the Nation's industrial structure, trade flows, and labor market dynamics over this period demonstrates that resource immobility is not the problem. In fact, because it enjoys a comparatively high degree of resource mobility, the U.S. economy is more flexible and more adaptable than the economies of its major industrial competitors.

In Joint Economic Committee hearings, testimony before the House Banking Subcommittee on Economic Stabilization, and in debates with Congressional advocates of industrial policy, I have repeatedly issued challenges that they bear the heavy burden of proof. The responsibility rests on their shoulders to show that the industrial policy they advocate will put us on the path of economic growth.

After a review of the several hearings on industrial policy held by the Joint Economic Committee and the House Banking Subcommittee on Economic Stabilization, it becomes clear that the burden of proof has yet to be substantiated. Literally hundreds of witnesses have appeared before congressional panels in the last year, yet it seems ironic that there is more doubt about industrial policy now than when the hearings commenced.

Indicative of the failure to meet the burden of proof are some of the following important yet unanswered questions: Why would the job situation in the United States improve under an industrial policy when in every major industrialized nation which has an industrial policy the record shows that jobs have not fared as well as they have in this country without an industrial policy? Are the "best and the brightest" in our Nation's capital? How will the decisionmaking process in Washington be improved with the creation of a new bureaucratic board or agency? Will an industrial policy council be truly representative of all major economic actors in our economy? Will that segment of our economy where the greatest job growth occurred during the last fifteen years—small and medium size businesses—be accorded appropriate influence in the decisions made by the decisionmaking elites? Will a Bank for Industrial Competitiveness be able to overcome the waste and abuse which led to the termination of the Reconstruction Finance Corporation? How can a Bank for Industrial Competitiveness generate economic growth when it does not provide new capital but only takes from one sector to give to another sector? It seems obvious to me that with these and other questions unanswered—with a failure to sustain the burden of proof for change—that the United States should not adopt a new, radical economic course.

One of the important contributions of the Report is the finding that the main source of the comparatively poor long-run U.S. growth performance can be found in a low rate of investment and capital formation. The Report concludes that an industrial policy is not needed to redistribute the existing level of investment resources. What is needed is an industrial strategy that expands the pool of investment resources! Only if a larger percentage share of the Nation's GNP is devoted to growth-enhancing activities (capital formation, investment in human capital, and technological innovation) can the Nation realistically be expected to achieve a higher growth trajectory in the years ahead. In particular, the Report finds that U.S. growth performance can best be improved by raising overall saving and investment rates for the economy, and by relying on competitive markets to allocate investment resources among competing industries.

Since numerous factors affect saving and investment behavior, a successful industrial development strategy must influence as many of these factors as possible. For example, investment tax credits may not stimulate new investment if corporate tax rates are prohibitively high. Moreover, the regulatory burden can reduce investment by lengthening the investment period, and by creating uncertainty, even though interest rates and taxes may be favorable. On the saving side, it is unlikely that IRA accounts alone will have much influence on aggregate saving; but, in conjunction with other policies, they can have a large impact. The rate of interest on deposit accounts at financial institutions, the after-tax rate of return on investment projects, and inflationary expectations are other important factors that influence saving behavior.

In general, raising the Nation's long-term growth rate can be achieved only by pursuing a set of coordinated macroeconomic policies aimed at the various aspects of the saving and investment process. This Report offers the following advice to policymakers on developing a pro-growth, competitive strategy, as an alternative to the strategy offered by industrial policy advocates:

Emphasize policies aimed at providing a stable, non-inflationary macroeconomic environment. This will require abandoning short-run monetary and fiscal policy targets such as interest rates and the unemployment rate in favor of long-run targets such as GNP growth, inflation, job creation, and capital formation.

Provide an open, competitive economy by aggressively pursuing trade liberalization at home and abroad. In those industries whose markets are global, free trade policies are an important aspect of the competitive structure of domestic industries. Tariffs, quotas, and other restrictive trade devices lead to domestic monopolies and high prices and wages in the protected industries. These trade distorting effects are reflected in a loss of jobs and competitiveness in nonprotected industries.

Pursue domestic competition through deregulation and by removing the anticompetitive effects of antitrust laws. Mergers should be allowed to occur in those industries where economies of scale are necessary for long-run international competitiveness.

Provide strong support for basic research and improve the quality of education, including training for displaced and other unemployed workers.

Pursue tax and regulatory policies aimed at increasing saving and investment. The Reagan Administration initiated a bold program of tax cuts, tax reform, and regulatory relief aimed at stimulating saving and investment. This emphasis on revamping our tax code and regulatory institutions to meet revenue needs and social objectives of government without creating unnecessary disincentives to save and invest should continue to receive high priority.

Adopt policies that would reduce Federal spending. Clearly it is uncontrolled increases in Federal expenditures that are the cause of our deficit problems, not tax cuts. Receipts as a percent of GNP are at their historic average of 19 percent and have remained at about that level for two decades now. Outlays, on the other hand, are well above their historic average, having risen from 18.0 percent of GNP in 1965 to 24 percent in 1984. As an overall benchmark, I believe that spending restraints should be sought to hold the growth rate of Federal outlays below the growth rate of GNP. In the long run, this will eliminate the structural imbalance between Federal revenues and outlays, and will allow reduction in the size of the Federal Government relative to the private sector and, thus, stimulate private economic growth.

The above-mentioned initiatives are necessary to improve the overall economic climate for capital formation and economic growth, but other initiatives are needed to "target the process of innovation." In this regard, the Report endorses the Agenda for U.S. Technological Leadership and Industrial Competitiveness, prepared by the House Republican Steering Committee of the Task Force on High Technology Initiatives. The proposals of the Task Force are discussed in Chapter VII and are given in detail in the Appendix.

In summary, the industrial policy movement is a misguided effort by proponents to shed an antigrowth, antibusiness image without appearing to endorse supply-side economic policies. Unfortunately, the industrial policy movement is based on false and misleading assumptions about the American economy and its problems. In spite of these deficiencies, the industrial policy debate has renewed the important issue of the need to pursue coherent economic policies aimed at achieving a higher rate of economic growth.

From the hearings which the Joint Economic Committee held on industrial policy, the conclusion is clear. Promoting economic growth is best achieved by fostering a competitive environment, not by an industrial policy board or bank. The United States should focus on the fundamental economic objectives by removing the barriers to economic growth. In such a pro-growth environment, the consumer and producer will be given the competitive climate where economic growth can best be fostered. This will do more to increase jobs and sustain economic growth than the creation of an elite bureaucratic board or of a new bank which concentrates on redistribution rather than pro-growth policies.

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INDUSTRIAL POLICY MOVEMENT IN THE UNITED STATES: IS IT THE ANSWER?

By Robert Premus and Charles H. Bradford*

I. INTRODUCTION

Concern that the U.S. economy is losing its ability to generate jobs and compete in world markets has prompted an emotional debate on the need for a national industrial policy to encourage economic growth. Like most public debates the issues tend to be cast in polar opposite stereotypes. The industrial policy debate is viewed as "backdoor socialism" by many of its opponents and as an alternative to the imaginary world of pure competition by its proponents. These stereotypes help people to line up for or against incorporating government planning into the economy but they add little to the public's understanding of the problems, challenges, and opportunities confronting our economic system and way of life.

The industrial policy movement is firmly founded on the belief that U.S. industries are performing badly because of structural deficiencies in the American economy. Warnings of secular stagnation, increasingly destabilizing inflationary-recessionary cycles, mounting long-term structural unemployment, and continued deterioration of U.S. competitiveness inundate the voluminous industrial policy literature. The American people are asked to believe that the private sector of the economy is no longer capable of responding efficiently to technological change, foreign competition, and changing consumer preferences without government help. The public is told this help can only come from a national industrial policy since conventional fiscal, monetary and regulatory policies of the Federal Government are incapable of dealing with structural problems. Unquestionably, the central focus of the industrial policy debate is on whether or not the government can do a better job than the market in allocating scarce resources such a labor, capital, entrepreneurship, land and technology among competing industries.

On the other side of the debate are the free-marketeers, who see in industrial policy an acceleration of the trend toward socialism. Moreover, they are adament in their belief that government planners cannot outguess the market. They see the establishment of an industrial policy lodged in the high echelons of government as complicating economic decisionmaking by making it easier for individuals, groups, and industries adversely affected by economic change to resort to the political process for aid. Rather than facilitating economic change, an industrial policy, in their view, would politicize investment decisions and lead to institutional sclerosis, often referred to as the "British disease." The result would be an enormous squandering of national economic resources, slower economic growth, higher taxes, and Big Government to deal with the enormous social costs of economic stagnation. Consistent with their market mentality, they see more government, not less government, as the road to economic prosperity.

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* The authors are staff members of the Joint Economic Committee. Dr. Premus serves as Economist and Dr. Bradford serves as Senior Economist and Assistant Director.

The purpose of this study is to provide a critique of the industrial policy literature, including 1983 Joint Economic Committee hearings, and the important issues that the literature raises regarding industrial performance and government policy. The conclusions reached in the study reflect the views of the authors, and not necessarily the complete views of the political parties, particular presidential candidates, or Members of Congress; nor do they necessarily reflect the collective judgment of the members of the Joint Economic Committee.

The basic conclusion of the Report is that industrial policy advocates *grossly underestimate* the long-run resiliency of the American economy. This finding in itself neither bolsters nor detracts from the case for an industrial policy, but the Report also concludes that industrial policy advocates *grossly overestimate* the ability of government to stimulate economic growth by controlling the flow of resources in the Nation's capital and investment markets. Moreover, the Report finds that industrial policy as a theory of economic growth is trivial and misleading because it confuses allocation decisions with long-run macroeconomic policies that provide a climate for innovation, technological change, and economic growth.

Finally, the Report concludes that the U.S. economic performance relative to the rest of the free world economies is not nearly as bad as industrial policy advocates would have us believe. To be sure, the U.S. economy is under enormous competitive pressures, but it is adjusting rapidly to changing world trade patterns. To have the government intervene in these adjustments would run the risk of slowing the market process and leading to a loss of U.S. competitiveness.

The Report draws upon testimony provided by experts who appeared before the Joint Economic Committee at hearings on U.S. industrial policy held from June 1983 through October 1983. It also draws upon the testimony of experts in other congressional hearings on the industrial policy issue, as well as the voluminous professional economic literature on the subject.

The Report is organized as follows: Chapter II attempts to define and evaluate the theoretical and philosophical underpinnings of the industrial policy issue. Chapter III examines a number of explicit industrial policy proposals that have been put forth as a solution to the Nation's industrial problems. Chapter IV examines the issue of U.S. competitiveness and domestic economic growth. That chapter concludes that economic change is part and parcel of the economic growth process and should not be considered as bolstering the case for an industrial policy. Chapter V examines the Japanese record on industrial policy and concludes that there is little in the record to suggest that an industrial policy would be appropriate for the United States. Chapter VI examines the industrial development practices of State and local governments within the United States in search of clues about the desirability of industrial policy at the national level. Chapter VII presents alternative policies to bolster U.S. competitiveness without resorting to industrial policy interventions. A pro-growth, competitive strategy is advocated that would rely upon government to provide the incentives to expand the Nation's factors of production—capital, labor, technology, and industrial infrastructure—and upon competitive markets to allocate these resources among the competing industries. The final chapter concludes with a summary of the Report's major findings and recommendations.

II. INDUSTRIAL POLICY, KEYNESIANISM, AND THE WELFARE STATE

This chapter examines industrial policy from a philosophical perspective. The purpose is to draw attention to the political and theoretical underpinnings of the industrial policy movement and to the policy issues that it raises. An examination of the numerous industrial policy plans, the economic assumptions that underlie the industrial policy movement, recent legislative actions, and the experience of Japan and State and local governments with industrial policy are left to subsequent chapters.

STRUCTURAL ADJUSTMENTS AND GOVERNMENT SPENDING

Industrial policy advocates hold a disturbingly pessimistic outlook for the U.S. economy. Their pessimism probably reflects the depth of the 1974–1975 and 1981–1982 recessions which gave birth to the industrial policy movement, but one would think that the "dark cloud" would disappear when, week after week, the actual facts about the American economy are painting a different picture. In just a few years, a deeply troubled U.S. economy has been transformed into one that is now expanding quite rapidly. Most analysts agree that progress against inflation, high interest rates, and high unemployment has laid a firm foundation for a long period of sustained economic growth.

If economic conditions gave birth to the industrial policy movement, political factors undoubtedly account for its continued momentum. The industrial policy movement has won the approval of the liberal wing of the national political spectrum, which is in desperate need of an innovative, new concept to replace outmoded Keynesian liberalism. Industrial policy is well suited for this purpose because it provides an ideological basis for more government spending, higher taxes, and more government regulation of the economy. We are told that if the United States wants to survive in the new world economy, we must accept increased government controls over the domestic flow of capital, vastly increased government spending for social and welfare programs, vastly improved education, increased expenditures for science and technology, and a multi-trillion dollar program to rebuild our cities and provide a modern industrial infrastructure. Large amounts of money for adjustment assistance such as retraining, relocation allowances, and income support are also given high priority in the liberal spending agenda.

Lester Thurow, one of the intellectual progenitors of industrial policy, explained the relationship between industrial policy and growth in government spending this way:

> When one reviews what must be done—massive public investment, budget surpluses to generate more savings,

> large compensation systems, increases in income transfer payments, and tax cuts for the lower middle class—it is clear that one of the basic ingredients of future progress is a tax system that can raise substantial amounts of revenue fairly.[1]

Thurow adds:

> The individual-safety net approach also needs to be used. Transitional aid of training, relocating, and getting through a period of unemployment should, if anything, be overly generous. The goal was not to spend the least possible, but to promote a rapid rate of economic change.[2]

Robert Reich of Harvard and Dean of the industrial policy theorists, explains the connection between the welfare state and industrial policy in this manner:

> America's economic future now depends in large part on the speed and efficiency with which the labor force can be shifted into flexible production. Social programs that prepare Americans to meet the challenges and accept the insecurity of adaptation are central to this transformation. Generous unemployment compensation, well endowed education and training programs, an adequate supply of housing, and comprehensive health care—if administered in ways that mesh with the opportunities in emerging flexible-system enterprises—should promote adjustment within the labor force. They would give the labor force the will and ability to learn new skills, to discover new job opportunities, and to relocate. They would support the economic change.[3]

KEYNESIAN AND INDUSTRIAL POLICY THEORIES

In the post-World War II period, Keynesian economics provided the rationale to justify additional government spending to offset the social costs of long-term economic stagnation. The liberal establishment was quite smug in its belief that the welfare state was necessary to prop up a faltering, sputtering private sector economy. History will probably record the demise of this Keynesian ideology with the birth of "supply-side economics," but the liberal "spend-your-way-to-prosperity" philosophy lives on in the name of industrial policy.

There is a remarkable resemblance between Keynesian and industrial policy ideologies. The goals are the same: a continued increase in government power and a further extension of the welfare state. The policy tools are the same: government spending, taxes, and regulatory practices. Even the outlook for the national economy unites the two ideologies: both are based upon "doom and gloom" forecasts of future economic performance in the absence of more government intervention. Finally, liberal Keynesian industrial policy advocates share a deep abiding faith in the ability of gov-

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[1] Lester Thurow, *The Zero-Sum Society*. (New York: Penguin Books, 1980), p. 15.
[2] *Ibid.*, p. 55.
[3] Robert Reich, *The Next American Frontier*. (New York: Times Books, 1983), p. 219.

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ernment to improve the economic welfare of the Nation. Perhaps the fear of returning to the depressed economic conditions from which these two philosophies emerged—the Great Depression of the 1930's gave birth to Keynesianism—explains why their advocates hold government in such high esteem.

What differentiates the ideologies is their underlying theoretical interpretation of the perceived private sector stagnation. Keynesians argue for more government intervention to counteract what they perceive to be the inherent tendency for capitalism to reach an equilibrium far below full employment. The view that long-term secular stagnation is a permanent feature of capitalism arises from the belief that the Nation's saving rate tends to be too high to sustain consumption demand at or near full employment. With demand depressed, investment opportunities would be insufficient to sustain full recovery. The Keynesian solution is for the government to engage in deficit spending until full employment is restored.

Those who support industrial policy, likewise, foresee long-term secular stagnation and high unemployment, but for entirely different reasons. Particularly, industrial policy theorists look to deficiencies in the Nation's industrial structure (or mix of industries), not deficiencies in aggregate demand *a la Keynes*, as the primary problem. In general, they feel that institutional rigidities keep resources from flowing to their most productive uses. The result is low productivity growth, high unemployment, and declining U.S. competitiveness. The solution is to have the government enter the private domain of business and labor to restructure industries and free up resources so that they can find their way to the more productive sectors. But, in the world of big unions, big business, and organized special interest groups, the losers in the restructuring agreements will not agree to the necessary change unless they are guaranteed job security, related job search and health benefits, and welfare benefits. For this reason, an extension of the welfare state is viewed as a precondition for the economic revitalization, according to most versions of industrial policy.

Accelerationist Theories

The agreement of industrial policy theorists that economic growth can be stimulated by accelerating the natural transitions of the economy to a more efficient industrial structure is hardly convincing. The high mobility of capital and labor market resources in the United States is well recognized by most public policy experts and investment analysts. Money and other resources flow quickly to new, profitable investment opportunities and away from old, unprofitable investments. In fact, many people argue that they flow too quickly, causing the Nation to have unwarranted adjustment problems. There is simply no logical or empirical basis for suggesting that the market systematically underinvests in the wrong set of industries, and that the pace of industrial change is too slow or too fast.

Moreover, the *accelerationist theory* gives the misguided impression that consumers, businesses, and labor can look forward to renewed economic prosperity at no real cost to society. Economic growth theory teaches otherwise by emphasizing that a reduction in current consumption is necessary in order to free up resources for capital formation, human resource development, and technological innovation. To be sure, industrial policy theorists are aware that society's total commitment to economic development is important to the growth process, but they also know that their case for industrial policy rests solely on their belief that the government can allocate the Nation's investment resources more optimally than the private sector.

Another version of the accelerationist argument is that the private sector dwells excessively on short-term investments and ignores long-term investments. Because of the "knowledge gap" about long-run opportunities, the government is needed to shift resources from short-run to long-run investments. There are several problems with this weaker version of the accelerationist argument. First, it makes the questionable assumption that the long-run planning horizon of politicians is longer than the planning horizon of corporate executives. Second, it presumes that industry executives will be willing to participate in the deliberations of the industrial policy board and share sensitive information about potentially lucrative investment opportunities with each other. There is considerable reason to doubt that executives would be willing to divulge sufficient information about their operations and plans. A more likely reason for Board participation would be to inquire about how their rivals perceive long-run opportunities, creating a game-like atmosphere. Finally, few reasonable people would accept the basic premise that the "knowledge gap," if it exists, can be overcome by government planners. Moreover, even if it were true that government planners would offer new insights into long-run investment opportunities, the free dissemination of this information would be preferable to sharing it with only a few selected firms.

Another version of the accelerationist argument to justify greater government involvement in the Nation's capital markets is the "capital gap" problem. According to this version, capital markets ration funds efficiently among "first tier" investments, but "second tier" investments are underfunded. This solution is to use government to increase the flow of capital market resources to "second tier" investments. What the industrial policy advocates fail to realize is that their strategy would reduce the flow of funds to "first tier" investments. The result would be less, not more, economic growth from a given level of capital market resources.

Only if the Nation's overall supply of capital market resources is increased—as a result of a higher national saving rate—would it be possible to fund "second tier" investments without reducing "first tier" investments. But, if this is the case, a government program to reallocate funds among private sector investments would be unwise, unless it could be shown that a national industrial policy board could "pick winners" better than the market.

Strong Industrial Policy and Industrial Targeting Issues

Any salesman knows that he can increase market acceptance of his product by emphasizing its good qualities and glossing over its limitations. Perhaps this is why most industrial policy advocates deny any wish or desire to introduce industrial targeting into policymaking at the national level. In fact, they are fond of denouncing central planning schemes and other interventionist techniques in favor of industrial councils and other consensus building schemes. Yet, the industrial policy advocates lose credibility when they advocate the establishment of a new Federal Government agency to set industrial priorities and bring the full weight of the Federal Government to bear on policies to achieve these objectives. There is no denying that industrial targeting carries with it the necessity of "picking winners" and "picking losers." If the Federal Government rushes aid to the beleaguered steel industry, that is industrial targeting. If it aids the high-tech industries, they are the chosen ones.

Charles Schultze of the Brookings Institution, and former Chairman of the Council of Economic Advisers under President Carter, explained the industrial policy targeting issue this way:

> The various proponents of industrial policy offer a wide range of suggestions to deal with the structural problems they identify. Many of their proposals involve new or modified federal initiatives in traditional areas: expanded support for technical education, research and development, and programs to retrain workers. Whatever the merit of these ideas, they do not constitute a major new thrust in economic policy. What is new, however, is the proposal that government deliberately set out to plan and create an industrial structure, and a pattern of output and investment significantly different from what the market would have produced . . . industrial policy thus aims to channel the flow of private investment towards some firms and industries—and necessarily, therefore, away from others. The government develops, at least in broad outline, an explicit conception of the direction in which industrial policy should be evolving and then adopts a set of tax, loan, trade, regulatory and other policies to lead economic activity along the desired path.[4]

The concept of scarcity is crucial to understanding the targeting issue. For a given amount of government aid (subsidies, tax concessions, and regulatory relief), the more industry A gets, the less industry B gets. Only if the total pool of Federal aid is expanded is it possible, technically, at least, to give all industries a pro rata share of Federal aid and, thus, avoid industrial targeting, but, even in this case, any planned tax favoritism would mean that the government is in the business of "picking winners" and "picking losers." The plain fact is that industrial targeting is *central* to industrial policy and without it there can be no true industrial policy.

In its strong form, an industrial policy would bestow on a new government institution certain super agency powers to coordinate the many government activities, programs, and policies that affect industry. Industrial policy advocates make the case that the United States already has an industrial policy, but it is of the worst sort: *ad hoc* and uncoordinated. In concept, the new government institution, generically named National Industrial Policy Board in this section, would be given authority to make industrial loans, change regulations, forgive taxes, grant subsidies, and devise import and export strategies for specific industries and firms. The Board would use its board authority to implement a "vision of the future" about the desirable industrial structure in an attempt to ensure that that industrial structure emerges in the marketplace. The "vision of the future" would be arrived at by extensive discussions and consultations with non-Board representatives from industry, labor, special interest groups, and government officials. The execution of the industrial policy plan would be the responsibility of the Board and its technical staff.

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[4] Charles L. Schultze, "Industrial Policy: A Dissent," *Brookings Review*, Fall 1983, p. 4.

There are several practical difficulties inherent in strong industrial policy. First, to what extent is it realistic to assume that discussions with a broad range of individuals can overcome the technical limitations of forecasting long-term industrial trends? Few individuals would buy the argument that a public opinion poll, which is about what the consensus building industrial policy process is all about, is a credible device for forecasting economic trends. Certainly, all economists and forecasters would agree that the public's perception of future trends is important to their consumption, investment, and work/leisure decisions. But to claim that these perceptions would somehow be more accurately reflected through the industrial policy process more than is made available to decisionmaking through the current economic information process is highly questionable.

Second, many individuals feel that the creation of a National Industrial Policy Board would make it much easier for declining industries, unions, and any groups adversely affected by industrial change to gain access to government resources to solve their problems. One result would be the inherent inefficiencies that would result from a shift, in the eyes of corporate investors, away from market signals toward Washington.

Third, the argument that industrial policy decisions would largely be political decisions is greatly bolstered by the lack of objective economic criteria for determining which of the many thousands of industries and firms need or deserve government assistance. Paul Krugman, in a paper prepared for Industrial Change and Public Policy, a symposium sponsored by the Federal Reserve Board of Kansas, called attention to the problem of the lack of objective investment criteria.[5] If depressed industries (e.g., steel) are chosen, the social rate of return on government aid would be quite low because it would add to existing excess capacity. If high value-added industries are chosen, unemployment may increase by drawing resources away from labor intensive industries. Finally, if high-tech industries are chosen, an industrial policy may slow the natural flow of resources to the less technologically oriented industries and reduce competitiveness. Herein lies the great dilemma of industrial policy: lacking credible objective criteria for selecting investments, industrial aid would be dispersed haphazardly or on the basis of political criteria. In any case, as Congressman Lungren emphasized throughout the Joint Economic Committee industrial policy hearings, the burden of proof is on those who advocate strong industrial policy to show that the "best and brightest are in Washington."

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[5] Paul R. Krugman, "Targeted Industrial Policies: Theory and Evidence," Federal Reserve Bank of Kansas City Symposium on Industrial Change and Public Policy, August 25-26, 1983.

Finally, the current *ad hoc* industrial policy, which industrial policy advocates choose to call the hodgepodge of existing government policies that affect industry, may be a better feasible alternative than attempting to rationalize or coordinate these programs. Dr. Charles Schultze, in a Fall 1983 *Brookings Review* article on industrial policy, said this on the issue:

> In fact, the *ad hoc* approach is precisely the right approach. To every rule there are exceptions. It may very occasionally be in the public interest to supersede the market's judgment and to prevent the bankruptcy of some major firm. But it is a virtue that a special law is now needed for each case. It is a virtue that each case is, in fact, treated as an exception. Only very exceptional cases are likely to muster the support needed to enact a special law and the government's bargaining power, to impose needed and painful reforms on management and labor, is consequently enhanced. Should this process of decision by exception be supplanted by an ongoing authority to initiate bailouts, the result would almost surely be a politically vulnerable fund, available to help avoid or delay politically sensitive plant closings.[6]

WEAK INDUSTRIAL POLICY AND INFORMATION

Many advocates of industrial policy want only to create a new government agency to collect and distribute information on industry trends and make recommendations to the President and the Congress on how to deal with industrial problems. They want no part of an industrial development bank or Economic Cooperation Councils. The objective is to ensure that the President and Congress do not ignore important microeconomic level concerns when they make macroeconomic policy decisions.

This version of a weak industrial policy stems from a perceived weakness or deficiency in the Nation's economic information system. Its advocates feel that inadequate information is made available to the public and its elected representatives on the Nation's evolving industrial structure.

It cannot be denied that better information will lead to better policy decisions, but, in fact, the paucity of data to analyze the trends and projections at the industry level is not a weakness of economic public policy analysis within the current system. Economists have devoted considerable effort to construct large-scale econometric models of the Nation's economy since the post-World War II period. These models contain an appropriate data base and, in many cases, thousands of equations that describe in great detail sectoral components of the Nation's economy. Many of the models are specifically designed to capture structural changes in the American economy with a system of interdependent equations. These models, and the data base that supports them, provide an enormous volume of economic information about the economy at the micro and macro levels. The models provide private and public sector decisionmakers with data on historical trends and projections to help them make subjective judgments about industry trends, future events, and public policy alternatives.

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[6] Charles L. Schultze, *op. cit.*, p. 11.

Another important use of the data and economic models is to answer "what if" questions. The measurement of the impact of changes in taxes, government expenditures, or foreign exchange rates are only a few examples of how these models are used to improve economic decisions.

Apparently, the advocates of a weak industrial policy are dissatisfied with the quality of these models and/or the information that they provide. It would be helpful if they would be more specific about what they see as the major deficiency in the current economic information generating process. Do they want more equations added to the models because important sectors, or industries, are omitted, or are they asking for more accurate forecasts? In any case, they ought to explain how setting up a new government agency will improve data collection, economic forecasting, and economic analysis.

A second part of their concern seems to be that the available micro level information about the Nation's industrial structure is not considered in economic decisionmaking at the national level. The implicit assumption is that the White House, Treasury Department, Office of Management and Budget, Congressional Budget Office, congressional committees, Department of Commerce, and the Federal Reserve System deal only with macro data in their decisions. A cursory review of the activities and publications of these agencies and organizations would readily convince any objective observer that this is not the case. As Charles Schultze told the Joint Economic Committee:

> Just as a final footnote, it is probably true that the Chairman of the Council of Economic Advisers, Republican or Democrat, in terms of time and staff, spends 75 percent on micromatters and 25 percent on macromatters. You do not have major fiscal policy decisions every day.[7]

The upshot of this discussion is not to suggest that major improvements in economic data collection, modeling, and industry studies are not called for. To the contrary, improvements are desirable, but deficiencies in the current economic information system do not bolster the case for an industrial policy. To do so, the industrial policy advocates would have to demonstrate that a new government agency would provide superior information. Economic data collection and analysis is a multi-billion dollar business. Dozens of private sector firms, universities, and government agencies are involved in this process. Industrial policy advocates should ask themselves how a new Federal agency would bring about dramatic improvements in economic information about industry trends.

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[7] U.S. Congress, Joint Economic Committee, *Industrial Policy, Economic Growth and the Competitiveness of U.S. Industry*. Hearings before the Joint Economic Committee, 98th Cong., First Session, Part 3, October 31, 1983, p. 110.

The delivery of information is another concern of industrial policy advocates, but, as usual, they misrepresent their case. Perhaps a new Federal agency could be established to "package economic information" differently than is currently the case. For example, the new government agency might serve as a clearinghouse for ongoing public and private sector industries and firms and sectors of the economy. It could maintain a large data file on industry data and make that information and supplementary analysis available to the public and to "key" economic decisionmakers.

The policy to create a new Federal agency to "funnel" information to key decisionmakers has a number of limitations. First, it could be argued that government policymakers, including the Department of Treasury, Office of Management and Budget, and the Federal Reserve System are unaware of or ignore micro level data in their decisionmaking process. But as we have seen, this is not the case. In fact, "information overload" may be more of a problem.

Another possibility is that the Congress is not well served by its information fact gathering agencies, such as the Congressional Budget Office, Office of Technology Assessment, General Accounting Office, and the Congressional Research Service. Yet, each of these agencies has a well-qualified staff to provide information to the Members of Congress and to the committees they serve. In addition, each of the numerous committees of Congress is served by a staff of highly qualified experts and professionals. Moreover, lobbyists and special congressional organizations, such as the Congressional Clearinghouse for the Future and the Northeast-Midwest Institute, provide information and advice on long-term economic trends and conditions. Anyone familiar with Capitol Hill ought to be impressed with the huge volume of information that inundates the decisionmakers on a daily basis. Washington may not be the "intellectual capital of the world" as some may think, but it has a legitimate claim to be dubbed the "information capital of the world." Do industrial policy advocates simply want to increase the flow of information?

A more realistic view is that the industrial policy advocates want to screen information or, at least, control its flow, so that they can exercise some control over economic decisionmaking. Information is power. Having access to information that can be selectively channeled to the news media, lobbyists, and interested groups throughout society is a potentially powerful mechanism whereby an industrial policy bureaucracy could exercise considerable control over economic decisionmaking in a democratic society.

When all is said and done, it would appear that the industrial policy advocates are primarily dissatisfied with the economic decisions that are made in Washington rather than with the process by which these decisions are made. Consensus building in Washington is a highly complex, dynamic process over which no one has complete control. Of course, the President and key Members of Congress have much more influence than others. A Democratic political system with checks and balances, such as ours, requires considerable collaboration and sharing of information and power. If industrial policy advocates are dissatisfied with the role of Congress in this process, perhaps an industrial policy strategy should investigate ways to reorganize Congress so that it will better reflect the "visions" of the future of its constituents, rather than attempting to short-circuit the process.

SUMMARY OF FINDINGS AND CONCLUSIONS

In this chapter, the philosophical and theoretical origins of the industrial policy movement were examined and evaluated. Industrial policy was seen to be a substitute for outmoded Keynesian theories to justify increased government spending and a new wave of government interventions into the economy. The difference is that instead of more government to restore full employment, industrial policy theorists call for more government to stimulate economic growth by speeding the transition to what they envision is a more efficient industrial structure.

Unfortunately, industrial policy does not offer a credible theory of economic growth because it is based upon the mistaken belief that the slowdown in the Nation's industrial growth rate can be reversed without making the necessary sacrifices in consumption or government spending to increase capital formation, human resource development and technological innovation. In the short run, resources to invest in growth-enhancing activities can only come from the economy's current level of output. As economic output expands, consumption and government services will rise, reflecting a high level of affluence.

While there are strong and weak forms of industrial policy, it is argued here that industrial targeting is part-and-parcel of industrial policy and without it there can be no true industrial policy. The rationale for an industrial policy that would simply have government "package" information about industries different than is currently the case does not accomplish much. To make decisionmakers more aware of available information and to improve the role of Congress in the national debate over economic policy issues are certainly laudable goals, but this chapter concludes that a new government agency is hardly the best mechanism to improve the quality of policy decisions in Washington.

III. INDUSTRIAL POLICY PLANS TO RESHAPE AMERICA

Industrial policy as an intellectual movement gave birth in recent months to a number of explicit plans to reshape the Nation's industrial landscape. These industrial policy plans—the topic of this chapter—come in many sizes, shapes, and forms, but they all have one thing in common: an extension of government involvement in the Nation's industrial decisions. As stated previously, proponents of industrial policy claim that, since traditional measures are insufficient to combat our current economic malaise, the government must create new institutions and programs in order to promote economic development and growth.

Unfortunately, the debate surrounding these proposals is plagued by a surprising amount of confusion since each plan is based on a different concept of industrial policy. The wide variety of industrial policy plans that has surfaced reflects the fact that many of these proposals are based on different assumptions about industrial performance, conflicting goals, and ill-defined terms. Trying to compare the plans is like comparing apples and oranges. Perhaps this is what prompted Professor Paul Samuelson, Nobel laureate in economics, in testimony before the Joint Economic Committee, to label industrial policy "a solution in search of a problem."

PLANS TO REVITALIZE BASIC INDUSTRIES

Many proponents of industrial policy, including those associated with manufacturing and organized labor, believe that a national industrial strategy should focus on the task of revitalizing and reshaping America's basic industries. Rep. Stan Lundine (D–N.Y.), author of the National Industrial Strategy Act, recently stated that, "If this (industrial decline) continues to happen here, it is utterly predictable that not only will our industries be threatened, but our entire economy will drift into long-term decay." [1] He contends that without a strong industrial sector, the economy will not be able to support or maintain a strong service sector.[2]

Rudy Oswald, Director of the Department of Economics of the AFL–CIO, agrees with Rep. Lundine's observation: "The industrial base of the American economy is eroding and there is no coherent national policy to reverse the trend." [3] Mr. Oswald, as well as other labor and industry leaders, argue that the government needs to develop a national industrial policy which would target industries and regions that have been hit particularly hard. This, they contend, would help basic industries meet intense foreign competition and create employment growth.

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[1] Stan N. Lundine, "Now Is The Time For A National Industrial Strategy," *Challange*, July–August, 1983, p. 17.

[2] *Ibid.*, p. 17.

[3] U.S. Congress, Joint Economic Committee, *Industrial Policy, Economic Growth and the Competitiveness of the U.S. Industry*, Hearings before the Joint Economic Committee, 98th Congress, 1st session, Part 1, 1983, p. 52.

The AFL–CIO version of industrial policy would create a tripartite board in which government, business, and labor could work together to form a consensus on an industrial strategy, rationalize current micro-policies, and foster more cooperation among the three groups.[4]

In addition to the council, the AFL–CIO plan would establish two banks—one patterned after the Reconstruction Finance Corporation (RFC) and another which would be known as the National Development Bank (NDB). The RFC-type bank would handle loans and subsidies to private businesses for revitalization purposes, and the NDB would provide grants and loans to State and local government for infrastructure development. The AFL–CIO maintains that these banks, coupled with the tripartite board, are necessary if industry is to be restored to a competitive position.

Also, championing the cause of business and unions in the basic goods industries are Felix Royhtan and Irving Shapiro, who, along with Lane Kirkland of the AFL–CIO, joined forces to propose the creation of an Industrial Finance Administration (IFA).[5] Unsatisfied with the weaker industrial policy proposals emerging on Capitol Hill, in a series of news releases, this group revealed its plan to provide loans and "other assistance" to companies and industries plagued by stiff foreign competition and unable to obtain the funds they desire through commercial banks.

The objective of the IFA would be to prevent the economic changes that are occurring in the United States and world markets from harming business and union interests and to serve as a shield against foreign competition. The IFA would be regulated by a new executive agency, headed by an industrial development board, with three leaders selected from government, business, and labor. The IFA would initially be funded by the Federal Government at about $5 billion, with an additional $25 billion to be made available from pension funds, banks, and other lending sources.

Apparently, spokesmen for the steel and auto manufacturers and their unions are insistent that the Federal Government become involved in the investment banking business. Through centralized banking, these large concerns would undoubtedly have tremendous lobbying power to gain access to substantial financial resources available through the IFA or a similar organization. With control of this mechanism, big business and unions would also be able to sway other government agencies to allocate time and money to projects intended to spur growth in the IFA's selected industries.

The IFA plan calls for three or four selected industries to be analyzed and recommendations to be made regarding corporate strategies, wage rates, and Federal regulations that hamper an industry's ability to compete. Felix Royhtan adamantly denies that the IFA would "pick winners and losers" under this program.

Royhtan's claim that the IFA would not target funds towards some industries to the disadvantage of others is logically impossible. Stated previously, the scarcity of resources makes it impossible for the IFA to provide enough capital to all business sectors without picking winners and losers. Without an infinite amount of investment funds available, the IFA will inevitably only be able to help selected firms. Of course, firms not selected in the first or second round of financing would have a strong incentive to lobby Congress to increase the IFA budget so they also qualify the next time around. Also, Royhtan and backers of Oswald's AFL–CIO plan do not adequately address the question of how to keep the development bank free of politics and corruption, which led to the downfall of its predecessor of the New Deal fame, the Reconstruction Finance Corporation. The questions concerning lack of objective investment criteria discussed earlier were likewise not addressed by Royhtan and other supporting groups.

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[4] *Ibid.*, pp. 64–67.

[5] Center for National Policy, *Restoring American Competitiveness: Proposals for an Industrial Policy*, (Washington, D.C.: Center for National Policy, 1984), pp. 7–8.

HIGH-TECH STRATEGIES

Although there is widespread Democratic support for an industrial policy of some sort, Democratic positions on the issue appear to be split into different factions. Differing from those who desire to revitalize mainly basic industry, there are many Democrats who favor a major emphasis on the development of the high-tech industrial sector. The group, known as the "Atari Democrats," advocates an industrial policy which would allow resources in the declining segments of the economy to shift into emerging growth industries. "The challenge of the 1980's," suggests Senator Gary Hart, who epitomizes this group, "is to capitalize on America's technological revolution, not resist it." [6]

Supporters of this type of policy generally favor such measures as:

Creating more cooperation among government, business, and labor in order to develop a "National industrial strategy" and build a consensus behind it (although there is disagreement over how this cooperation can best be achieved).

Creating seed money for innovation in industrial reasearch and development.

Increasing the funding of education.

Expanding and improving programs to train and relocate workers who become structurally displaced or dislocated.

Revising antitrust laws in order to allow and encourage joint research and development projects.

Shying away from previous interventionist policies, most Ataris reject the idea of an RFC-type lending institution. "It would be premature to start with a bank," states Rep. Tim Wirth of Colorado, "when nobody is sure of what is needed and where we are going." [7]

PLANS OF PRESIDENTIAL CANDIDATES

The great diversity of theories and concepts relating to industrial policy are embodied in the views of the original eight Democratic presidential candidates. Even though the field has now been narrowed, three, the views of all eight past and current candidates illustrate the diversity of views within the Democratic Party. Every candidate, with the exception of former Governor Reubin Askew of Florida (who supports many of the concepts of industrial policy), formally endorsed some form of an industrial policy. All the candidates feel that more government involvement is needed in order to overcome structural barriers and to bring increased economic growth and development, but there is great diversity and division among the candidates as to how far we should go with our "industrial policy."

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[6] "Here Come the Atari Democrats," *Dun's Business Month,* January, 1983, p. 33.

[7] Monroe W. Karmin, "Industrial Policy: What Is It? Do We Need One?," *U.S. News and World Report,* October 3, 1983, p. 46.

The candidates' proposals are wide and varied. Senator John Glenn, for example, supports the concept of a tripartite commission on economic revitalization. He does not favor the creation of an RFC-type bank. Former Vice President Walter Mondale calls for more cooperation among government, management, and labor, with government providing "direct grants, loans at both competitive and subsidized rates, loan guarantees and tax, regulatory, export and import relief." [8] However, Mondale has not clarified his views on the establishment of an RFC-type lending institution per se.

Senator Hart also wants to promote more cooperation in economic policymaking. He wants government, business, labor, and capital markets to "work together" to modernize basic industries. He suggests that the Federal Government could provide startup matching funds for State efforts to help companies in emerging industries. But Hart rejects the idea of an industrial lending bank or a Federal coordinating board.[9]

Even though Senator Ernest Hollings originally introduced a bill in Congress that would have created an RFC-type bank, he has now backed away from the idea. Also he does not favor a formal economic coordinating board, but he urges more business-labor-government cooperation to find ways to restore U.S. competitiveness.[10]

Senator Alan Cranston supports an intensive and tight-knit industrial policy similar to the proposal of Felix Rohatyn, which would create an economic development board and a national development bank. The board would recommend financial assistance to specific industries—both declining and emerging industries.[11]

Reverend Jesse Jackson calls for economic planning, but he gives no details on how to implement it. He does not propose any specific policies nor does he propose any new institutional edifices, although he says consideration should be given to merging the Office of Management and Budget and the Council of Economic Advisers into a new "Planning Department." He says a similar linking of the Joint Economic Committee and the Budget Committees might be appropriate within the Congress. The goal of national planning would be a rational allocation of national resources, although the main function of the planning board would be information gathering. He points out that some of the necessary economic analyses are already being done by the Council of Economic Advisers and the Office of Management and Budget.[12]

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[8] *Ibid.*, pp. 45–47.

[9] *Ibid.*

[10] Ashley O. Thrift, legislative director to Senator Ernest F. Hollings, phone conversation with Dr. Charles H. Bradford, JEC staff, June 7, 1984.

[11] Monroe W. Karmin, "Industrial Policy: What Is It? Do We Need One?" *U.S. News and World Report*, October 3, 1983, p. 46.

Former Senator George McGovern says the United States has always had an industrial policy. It just hasn't done the job. He feels we need a Council representing all the important interests to make the necessary decisions for assisting needy industries. He also calls for something along the lines of the Reconstruction Finance Corporation to assist industries—both old and new—in need of capital investment. The Council would direct the use of such resources. McGovern would also make a heavy commitment to worker retraining and to rebuilding the Nation's public infrastructure.[13]

CURRENT LEGISLATIVE INITIATIVES

The debate over industrial policy has led to a number of legislative proposals designed to restore basic industry, spur high-tech development, or a combination of both. Although the various legislative initiatives are based on a differing mix of theories and assumptions, each exemplifies the premise that, since government is already deeply involved in the economy, there is a need to make that intervention more strategic.

National Industrial Strategy Act.—This Act proposed by Rep. Stan Lundine (D-N.Y.) and Rep. David Bonior (D-Mich.) would create an Economic Cooperation Council (ECC) to assist in developing economic policy.[14] The ECC would formulate a national industrial strategy and bring business, government, labor, and the public together to work out the compromises necessary to make the strategy work. The Council, consisting of 20 members recommended by Congress and appointed by the President, would be strictly advisory and have no regulatory authority.

In addition to developing and carrying out an industrial strategy, the ECC would provide information on the domestic and international economic situation, prepare and publish reports containing recommendations about industrial development priorities, and foster development of sector-by-sector committees to deal with the specific problems of regional industries. The recommendations and decisions of the ECC would not be binding upon affected industries. In fact, industries would have the option of choosing to participate in the federally sponsored revitalization projects of their choice.

The second thrust of the Act would be to create an industrial lending bank whose financial decisions would be guided by the industrial strategy of the ECC. This institution would serve as a last resort source of financing for the various troubled areas of America's older linkage industries and new, emerging growth industries. The bank would be as non-activist as possible, providing only partial funding of the financial needs of an industry, and only if no other sources of financing were available. In these cases, the bank would attempt to secure alternative sources of financing.

Proposal of Subcommittee on Economic Stabilization.—Congressman John LaFalce (D-N.Y.) has introduced "The Industrial Competitiveness Act," H.R. 4360, and "The Advanced Technology Act," H.R. 4361, based on hearings held and work done in the Subcommittee on Economic Stabilization. Today, these bills stand as the forerunner in the legislative process of those circulating on Capitol Hill. Congressman LaFalce chaired a series of hearings with approximately 150 witnesses and produced six volumes of written and oral testimony on industrial policy.

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[12] Jesse Jackson for President Committee, Position Paper—Economic Policy, "A National Planning Exercise," Part IV, p. 8.

[13] *McGovern for President Committee, Position Paper,* "Industrial Policy," p. 1.

[14] Lundine, *op. cit.*, p. 17.

The LaFalce legislation, H.R. 4360,[15] was reported by the House Subcommittee on Economic Stabilization on February 8, 1984. It calls for the creation of a Council on Industrial Competitiveness and Cooperation (CICC)—a body similar to the ECC in the National Industrial Strategy Act. The CICC, like the ECC, would have no direct authority or program responsibility and would do the following:

Create a base of information from which the economy and its current evolution could be analayzed.

Review existing micro-polices and recommend ways to integrate and rationalize them into a coherent, competitive industrial strategy.

Build a consensus behind an industrial strategy.

Make recommendations to Congress and the President concerning appropriate policy actions.

Claiming that financial markets often fail to provide adequate capital to old, declining industries or emerging growth industries, the Subcommittee proposal also advocated the establishment of a Bank for Industrial Competitiveness (BIC). The purpose of the BIC would be to cooperate with private banks to overcome structural gaps in capital markets. The BIC would be authorized to issue $8.5 billion in capital stock at a maximum rate of $2 billion a year to the U.S. Treasury and would operate as a money market lender, although concessionary financing would not be completely ruled out. The BIC would make loan guarantees up to $17 billion. It would also create a secondary market for industrial mortgages and financial institutions on the State and community level to provide patient capital to thousands of small firms.

The third major aspect of this plan is the formation of an Advanced Technology Foundation (ATF). The ATF's primary purposes would be to accelerate the pace of applied research and encourage the technological modernization of American industry. The Foundation would attempt to accomplish these goals by:

Focusing primarily on research which is in its early stages or industrial innovations that are likely to benefit a large number of industries.

Encouraging and supporting joint venture R&D projects.

Assisting in the development of new technologies and diffusing them more quickly than our competitors.

Providing money (through grant funding) and technical assistance for the development of new technologies.

Also, the Subcommittee plan calls for improvements and additional programs in the area of community adjustment assistance and for the establishment of a Credit Budget to improve the budgeting process for existing credit programs and activities.

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[15] U.S. Congress, House, *A Bill To Improve the Industrial Competitiveness of the United States*, H.R. 4360, 98th Congress, 1st session, 1983.

Not surprisingly, critics object to the creation of a centralized bank for reasons discussed earlier, but the critics also object to the broad powers that would be given to the Council on Industrial Competitiveness (CIC). One particularly objectionable feature of the LaFalce legislation was removed, fortunately, by the Subcommittee before reporting the bill. This is the proposal for subpoena power, giving the CIC the authority to access any information it desires in their investigation of a firm or industry. Clearly, this would have raised the possibility of firms being required to reveal proprietary information. Beyond the problem of immediate abuse, this type of power would have the possibility of retired board members becoming employed as consultants in the private sector and utilizing firm information to the disadvantage of businesses that were required by law to testify before the Board.

Some other objectionable legislative features of the LaFalce bill were also deleted before the legislation was reported. One of these would have permitted the Council on Industrial Competitiveness to intervene or participate in rulemaking, ratemaking, licensing, and other proceedings before any department or agency of the United States.

But there are other objectionable features of the LaFalce bill, apart from the overall philosophical thrust of the whole idea, that still remain. For example, under Section 103(n), the Council can request any other Federal agency to detail personnel to the Council. Under Section 107(c)(2), the Council can require committees of Congress to submit to the House or Senate a report setting forth the views and recommendations of such committees with respect to the Council's Annual Report. Indeed these are broad grants of power to the Council on Industrial Competitiveness that would make it a "super agency" in the government.

High Production Strategies To Rebuild America.—Headed by Representative Richard Ottinger (D-N.Y.), a group of 148 Democratic Members of Congress fashioned an aggressive industrial policy plan to "restore America's international competitiveness through a commitment to high levels of domestic production." [16] Among its many proposals, the group calls for:

> A national "capital budget" aimed at the construction of housing, highways, railroads, water supplies, waste treatment and disposal, and a myriad of other industrial infrastructure projects.
>
> A national investment facility "to meet the essential investment needs of industry and the economic development needs of our communities."
>
> A loose monetary policy to lower interest rates and capital market credit controls to discourage credit for unproductive purposes, but encourge credit for projects to improve productivity.

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[16] U.S. Congress, House, *A High Production Strategy To Rebuild America*, an unpublished report by a group headed by Richard C. Ottinger, "148 House Democrats Offer Alternative High Production Economic Plan," May 24, 1983.

The reestablishment of "emergency measures to cope with future destabilizing jolts or destabilizing price changes."

A "crash program to encourage energy efficiency."

An "incomes policy" to control food prices, housing inflation, health care costs and better balance among wages, productivity, and prices.

Aware that the *aggressive* industrial policy that they propose would cost money, the backers of Ottinger's Plan would repeal automatic tax indexing, rescind the Reagan tax cuts already in place, and hold "Pentagon spending to no more than a three percent real increase in Fiscal Year 1984." Interestingly, they see military spending reductions as a way to "increase our national security and influence the world."

Although the Ottinger Plan failed to win the endorsement of the Speaker of the House, Thomas P. O'Neill, Jr., its backers intend to follow up their joint statement with specific legislative proposals.

Proposal of the Senate Democratic Caucus.—Charging that the current method of formulating policy is shortsighted, adversarial, uninformed, and incoherent, a Special Task Force for the Senate Democratic Caucus, chaired by Senator Edward Kennedy (D-Mass.), calls for the creation of a Council on Economic Competitiveness and Cooperation (CECC).[17] Similar to the ECC, the CECC would be composed of 20 representatives from government, business, labor, and the public sector and would be established as an independent agency in the Executive Branch. The role of the CECC would be purely advisory and would have no mandated authority.

The CECC would be responsible for discussing and formulating a national industrial strategy and establishing advisory groups which would study and make recommendations concerning problems that affect individual industries in regional areas. The Council would recommend to the President and Congress steps and measures that should be taken to overcome and abate various economic problems (national and regional) only with the understanding that the affected parties would uphold their commitment and concessions to improve productivity, investment, etc.

In order to ease changes in the economy and ensure future economic growth, the Senate Democratic Caucus plan also outlines specific recommendations in the areas of innovation, education, adjustment, financing, and trade. Most of these recommendations consist of adjusting current Federal policy and programs, coupled with the addition of a few new programs. The recommendations in each of these five areas are outlined as follows:

1. Innovation Programs

Clarify antitrust laws to encourage joint venture R&D projects.

Establish permanent R&D tax credits.

Continually assess strategic technologies.

Disseminate innovations through newly created Technology Extension Centers.

Establish a new Federal program to stimulate technological innovation.

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[17] Report of a Special Task Force for the Senate Democratic Caucus, Edward M. Kennedy, Chairman (Washington, D.C.: Government Printing Press, November 16, 1983).

2. *Education and Human Resources*
   Extend compensatory education programs.
   Redirect vocational education programs.
   Upgrade science, math, and foreign language instruction at all levels.
   Aid gifted students.
3. *Adjustment*
   Modify the unemployment insurance program.
   Improve the training and retraining systems.
   Create community service employment.
   Establish adjustment assistance for firms and communities.
4. *Financing*
   Create federal support for state development finance agencies.
   Study and coordinate the impact of the Federal Government on financial markets.
   Conduct a study of capital markets.
5. *Trade*
   Tie import relief to a privately developed adjustment plan.
   Speed up the compensation funding for unfair trade practices.
   Broaden the GATT framework to improve and standardize procedures under which a country may apply for import relief, etc.
   Promote exports.

One of the unique aspects of the Senate Democratic Caucus Plan is that it does not advocate the creation of a national bank to promote industrial development. The Report of the Special Task Force states that, although there is merit in the concept of an industrial development bank, further studies are needed. The Report concludes that the CECC would be in a better position to evaluate the desirability of an RFC-type lending institution after it had a few years of operating experience.

THE CONTROVERSIAL BANK ISSUE

The debate among industrial policy advocates over whether or not to create an RFC-type industrial development bank, in addition to some sort of national cooperation council, illustrates an interesting problem in the issue of industrial policy. Many proponents of industrial policy strongly oppose the idea of a bank, while others believe that the bank is a critical and essential part of any industrial strategy.

Frank Weil, a former Commerce Department official and a strong supporter of industrial policy, stated in a hearing before the Joint Economic Committee that he opposed the RFC-type bank since "we (the Federal Government) tend to overkill when we go at things. The banks would be big. (They) would spend a lot of money. . . . I think a bank would tend to overdo it." According to Mr. Weil, sufficient signals can be sent to industry without creating a national industrial bank.[18]

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[18] U.S. Congress, Joint Economic Committee, *Industrial Policy, Economic Growth and the Competitiveness of U.S. Industry*, Hearings before the Joint Economic Committee, 98th Congress, 1st session, Part 3, 1983, p. 108.

Mr. Weil is not alone in his opposition. Several leading industrial policy proponents, such as Dr. Robert Reich of Harvard University, also reject the bank concept.[19] There is general agreement among these experts that the Federal Government should not become actively involved in the financial markets.

Although many proponents behind the industrial policy concept oppose the creation of a bank, those who are attempting to put the concept into legislation claim that without a bank, any sort of "cooperation council" would be reduced to another blue-ribbon commission. "Without a financing mechanism, it is unlikely that an industrial strategy will produce results," argued Rep. Stan Lundine in a Joint Economic Committee hearing: "We'll end up with plenty of good suggestions for revitalizing our industries and no way of implementing them." [20] The Report issued by the House Subcommittee on Economic Stabilization concurs with this view: "Our contemporary problems require a Bank whose principal role is as a catalyst for private action." [21]

The issue of whether or not the creation of an industrial development bank would have a positive or negative influence on the Nation's industrial climate can be settled by considering the economic consequences of the available options for financing the bank's activities. The government could borrow funds in the Nation's capital markets by selling bonds and use the proceeds of the bond sales to make loans to the targeted industries. The effects of this policy are quite easy to predict using standard economic analysis. Interest rates in the bond market would *rise* as a result of the additional government borrowing. Nontargeted industries would pay a premium for funds so that the targeted firms and industries could receive additional loans. This policy would be tantamount to a tax on nontargeted firms and a subsidy to the targeted firms. The most likely result would be jobs lost in the nontargeted industries and jobs gained in the targeted industries.

The other financing options include higher taxes or reduced expenditures on Federal programs. In either case, the side consequences, in terms of negative economic impacts on labor markets and other sectors of the economy (in order to subsidize marginal producers), must be considered.

In general, even if the technical limitations of industrial targeting could somehow be overcome, it would appear that the weight of economic thinking and experience would still be on the side of those who oppose an RFC-type industrial development bank, since the net result would be to simply create jobs in some sectors and destroy jobs in others. Also, all of the problems encountered in "picking winners," discussed in the preceding chapter, would plague bank officials. Dr. Schultze argues that there is absolutely no substantive criteria by which potential competitive industries, or "sound deals", can be identified. [22] In fact, economists point to England and France as examples of how industrial policy, instead of selecting growth firms, only served to prop up declining industries and hide unemployment.

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[19] Robert B. Reich, "Why the U.S. Needs an Industrial Policy," *Harvard Business Review*, January-February, 1982, p. 79. Also see "The Next American Frontier," *The Atlantic Monthly*, March, 1983, p. 43.

[20] U.S. Congress, Joint Economic Committee, *Industrial Policy, Economic Growth and the Competitiveness of U.S. Industry*, Hearings before the Joint Economic Committee, 98th Congress, 1st session, Part 1, 1983, p. 268.

[21] *Forging An Industrial Competitiveness Strategy*, a report with legislative recommendations from Democratic Members of the Subcommittee on Economic Stabilization, John J. LaFalce, Chairman, November 8, 1983, pp. 37–38.

Finally, the industrial policy plans fail to address the issue of how to keep an industrial development bank from becoming a "pork barrel" program. Almost every proposal would bring members of government, business, and labor together to work out concessions in order to promote increased growth and development. However, there are serious doubts as to whether this would actually occur. Dr. Schultze testified that he could not envision an agency actually carrying out such tradeoffs. Instead, he believes that backscratching would occur—in other words, declining industries would support measures for high-growth industries in return for protection, and vice versa. [23]

SUMMARY AND CONCLUSIONS

The many plans that have surfaced in recent months reflect the emotional and political fervor of the industrial policy movement. This chapter presented a number of these proposals and some of the controversial issues that surround them. Of these issues, none divide the proponents more than the industrial development bank. Those who favor a weak industrial policy see the bank as unnecessary and counterproductive, but advocates of a strong industrial policy view the bank as the "centerpiece" of their strategy.

Regardless of the form of industrial policy, its advocates frequently lump government support for education, research and development, and industrial infrastructure (e.g., harbors, roads, and airports) under the industrial policy label. While it may help to bolster the case for industrial policy to the unwary eye, the tactic is unfortunate because it confuses the industrial policy issues. Conservatives and liberals alike agree that government has an important role to play in the economy in these and other areas, but the question is whether they need to be performed under an industrial policy umbrella, or whether they can continue to be performed just as well under our current institutional arrangements. Proponents disagree on whether or not the government should "target" selected industries for special tax, research and development, education, and regulatory support. The differential treatment of industries according to some predetermined industrial policy plan is the issue.

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[22] U.S. Congress, Joint Economic Committee, *Industrial Policy,* Economic Growth and the Competitiveness of U.S. Industry, Hearings before the Joint Economic Committee, 98th Congress, 1st session, Part 3, 1983, p. 7.

[23] *Ibid.*

IV. ECONOMIC ASSUMPTIONS OF INDUSTRIAL POLICY

The industrial policy movement is based on several key assumptions about the American economy. The most prominent of these assumptions are the following:

The U.S. economy is less dynamic than in the past. Low economic growth, a decline in capital formation, and sagging productivity growth are cited as evidence of a loss of economic dynamism.

The U.S. economy has become too inflexible to adjust to changing economic circumstances. Deep seated structural problems are allegedly keeping resources from flowing to their most productive uses.

The competitiveness of the U.S. economy in world markets is on the wane. Large balance of trade deficits, a decline in the U.S. share of world output, and a decline in the share of U.S. world trade are often cited as evidence of declining U.S. competitiveness.

Mounting long-term or structural unemployment is a particularly acute problem in the United States. Workers are allegedly being thrown out of work by foreign competition and swelling the ranks of the long-term structurally unemployed.

These are the major economics assumptions that have prompted industrial policy advocates to declare that America is deindustrializing. The deindustrialization theorists insist that the economy is suspended in a quagmire of structural deficiencies, institutional rigidities, and irreconcilable conflicts. They want the United States to follow the lead of Germany and France and extend the influence of government over the domestic economy and the international sectors.

This chapter examines the economic assumptions of the industrial policy advocates. Long-run trends in U.S. economic growth, productivity growth, trade performance, manufacturing output, and job creation are examined in search of evidence of structural rigidities, declining competitiveness, and deindustrialization. The primary conclusion of the chapter is that the industrial policy advocates must be looking at the economy through a very faulty set of eye glasses. The Nation is experiencing an economic transformation from which is emerging an industrial structure that is more flexible and competitive than the one that it replaced. America is not deindustrializing and it is not losing its industrial competitiveness.

Moreover, the pace of industrial change—being driven by market forces—is neither too fast nor too slow. The economic transformation can best be described as an evolutionary and continuous process. There is no evidence that the pace of economic change is leading to massive long-term unemployment. The evidence indicates that the economy which is emerging from the economic transformation is more competitive, more energy efficient, and more technologically advanced than the economy that is being replaced. For example, the economy of 1970 could not compete in many of today's world markets, but the economy of 1984 can, and is, competing. In general, today's economy is meeting the competitive challenge, but the pace of change is sufficiently gradual to minimize disruptions and provide time and opportunity for most Americans to adjust without triggering a need for massive increases in government spending.

GNP AND PRODUCTIVITY TRENDS

Much of the concern that the United States is losing its competitiveness stems from the fact that long-term growth in U.S. output and productivity has been sluggish. As Table I indicates, real GNP increased at a 4.7 percent average annual rate from 1961 to 1965. The rate of real GNP growth declined to 3.2 percent over the period 1966 to 1970 and to 2.6 percent over the period 1971 to 1975, rising again during the 1976–1980 period. Productivity growth remained fairly robust throughout the post-World War II period, but it declined sharply after 1973 and it remained roughly at the 1973 level until the middle of 1982, when it turned upward. The industrial policy advocates rightfully observe these trends with concern. Finding ways to accelerate U.S. economic growth ought to be the focus of the public policy debate. What is at issue, however, is the belief of industrial policy advocates that the government policies of the other industrialized nations account for the relatively poor U.S. industrial performance. The danger of this belief is that its promise of a quick, painless solution to U.S. industrial problems may lead to ill-advised policies that hamper structural change and reduce industrial expansion.

TABLE I.—GROWTH RATES IN REAL GROSS NATIONAL PRODUCT, 1960 TO 1983

[Percent change]

	Annual average				1981	1982	1983
	1961–65	1966–70	1971–75	1976–80			
United States	4.7	3.2	2.6	3.7	2.6	−1.9	3.4
Canada	5.7	4.8	5.0	3.1	3.8	−5.0	3.8
Japan	10.0	11.2	4.6	5.0	3.2	2.5	2.0
France	5.8	5.4	4.0	3.3	.2	1.5	.5
West Germany	5.0	4.2	2.2	3.5	.2	−1.2	1.2
Italy	5.2	6.2	2.4	3.8	−.1	−.3	−1.5
United Kingdom	3.1	2.5	2.1	1.6	−2.0	.5	2.5

Source: Department of Commerce, IMF, OECD, and CEA.

There are several reasons why the sluggish U.S. output and productivity growth should not be attributed to the industrial policies of other nations. First, as Table I indicates, all of the industrialized nations experienced a similar slowdown in GNP and productivity growth in the 1970's. This finding suggests that fundamental economic forces far more powerful than the government actions of U.S. competitors are reshaping the world's industrial landscape. Second, when changes in employee compensation are compared to changes in labor productivity among the industrialized nations, it becomes apparent that U.S. competitiveness has not declined.

In general, from 1970 to 1980, the United States experienced a larger decline in productivity growth than most of the other industrialized nations, but employee compensation in the United States increased at a much slower pace.[1] The net result was a decline in relative unit labor costs in U.S. manufacturing relative to most of the other industrialized countries (See Table II). Japan and Germany also experienced a relative decline in unit labor costs (measured in terms of local currencies) but, when changes in foreign exchange rates are considered, the data indicate the United States experienced a significantly larger reduction in relative unit labor costs.

TABLE II.—RELATIVE INDEX OF UNIT LABOR COSTS IN MANUFACTURING, 11 COUNTRIES, 1970–81

[Unit labor costs in U.S. dollars]

Year	United States	Canada	Japan	France	Germany	Italy	United Kingdom	Belgium	Denmark	Netherlands	Sweden
1970	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1971	91.1	101.3	105.2	96.6	104.3	103.7	104.2	100.0	100.0	101.1	99.5
1972	81.5	102.6	116.1	100.3	106.4	104.6	101.2	102.0	97.7	104.4	102.6
1973	71.1	99.9	129.0	106.0	119.2	100.3	88.9	101.4	107.0	109.9	101.1
1974	70.9	102.1	136.6	99.9	118.6	93.8	93.8	104.9	109.8	111.2	99.4
1975	64.9	103.3	128.8	110.2	109.1	108.5	100.8	107.5	105.0	116.4	110.3
1976	68.1	113.5	127.4	107.6	111.0	95.9	93.5	109.1	109.2	113.9	126.4
1977	66.4	105.2	133.5	102.2	116.9	96.1	91.5	112.2	108.6	116.1	125.0
1978	61.7	93.5	148.2	101.0	122.7	94.2	98.4	111.1	109.0	113.7	112.4
1979	61.8	90.2	123.6	105.1	124.3	95.5	115.4	107.2	108.8	113.2	106.1
1980	62.4	91.5	105.7	110.3	120.2	94.1	143.2	102.8	99.2	106.7	105.9
1981	70.8	95.4	118.7	106.6	107.8	91.1	146.0	92.5	87.6	95.6	106.8

Note: The relative index is calculated by dividing the ratio of the index of output per hour by the index of hourly compensation for each country by the trade weighted average index for the 10 countries.

Source: Monthly Labor Review, December 1982, p. 10.

Third, industrial policy advocates appear to be oblivious to the real economic challenges confronting the Nation. As Table III indicates, for many decades, the United States has systematically invested a much smaller proportion of its resources into growth enhancing activities, such as capital formation. In particular, U.S. gross saving and investment as a proportion of GNP has been consistently lower than in Japan, Germany, and most of the other industrialized nations. As a consequence, the United States has experienced a slower GNP growth and a decline in its share of world output and trade.

TABLE III.—GROSS FIXED CAPITAL FORMATION AND SAVING AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT FOR SELECTED YEARS

	1962	1970	1978	1982
Gross investment as a percent of gross domestic product:				
United States	17.6	17.6	19.5	16.6
Japan	32.9	35.5	30.8	29.6
Germany	25.7	25.5	20.8	20.5
France	21.4	23.4	21.4	20.5

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[1] Patricia Capdevielle, Donald Alvarez, and Brian Cooper, "International Trends in Productivity and Labor Costs," *Monthly Labor Review*, December 1982, pp. 1–18.

TABLE III.—GROSS FIXED CAPITAL FORMATION AND SAVING AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT FOR SELECTED YEARS—Continued

	1962	1970	1978	1982
United Kingdom	16.8	18.5	18.0	15.4
Italy	23.7	21.4	18.7	19.0
Canada	20.5	20.8	22.2	21.1
Gross savings as percentage of gross domestic product:				
United States	18.9	18.1	20.3	15.9
Japan	34.8	40.2	32.3	31.6
Germany	27.3	28.1	22.8	21.5
France	24.6	26.2	22.6	18.5
United Kingdom	16.9	21.5	19.4	16.9
Italy	26.0	24.2	22.4	18.8
Canada	20.8	21.2	20.1	19.0

Source: OECD Economic Outlook.

The fundamental deficiency in the American economy is its reluctance to invest in economic growth. This is primarily the result of an inadequate economic growth policy. For example, one of the reasons that the United States invests less in capital formation is a tax system that encourages consumption and discourages investment. The deductability of interest on consumer durables, such as housing, provides a bias against saving. In addition, the U.S. Tax Code results in a double taxation of saving. Saving is taxed first as income, and later income from investment of savings is taxed. Also, the Tax Code discourages saving by reducing the after-tax rate of return on investment. Corporate earnings are taxed first as profits and then later as dividends when after-tax corporate profits are distributed. Inflation compounds the problem by forcing individuals into higher tax brackets and by inflating corporate profits. The net effect of the tax system is to lower the rate of return on saving and investment. In the 1970's, inflation interacting with the Tax Code played a major role in discouraging long-term U.S. capital formation and economic growth.[2]

An analysis of the factors behind the slowdown in productivity growth is necessary to put into perspective the required policy prescriptions. In its *1984 Annual Report,* the Republican Members of the Joint Economic Committee identified the following factors as accounting for much of the productivity slowdown:

> Growth in capital per worker declined sharply in the 1970's. This occurred in spite of a slight increase in the rate of capital formation because of the rapid growth in the labor force. The "baby boom" of the post-World War II period resulted in a "labor force boom." The problem resulted not so much because capital formation was low, but because labor force growth was high.
>
> The escalation of tax rates and government spending as a percentage of GNP created a disincentive to invest in long-term productivity-enhancing projects.
>
> The proportion of youth, women, and minorities in the labor force increased substantially during the 1970's. The labor force

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[2] U.S. Congress, Joint Economic Committee, *The 1981 Midyear Report: Productivity,* Report of the Joint Economic Committee (Washington, D.C.: Government Printing Office, 1981), pp. 1–25.

> mix exerted downward pressure on productivity growth because workers in these groups had less experience.
>
> Government regulations probably added to the slowdown in productivity growth as investment resources were devoted to meeting environmental, product safety, and occupation health standards.
>
> The "energy crisis" probably also affected productivity growth because a portion of the Nation's capital resources and technology were made obsolete by the new energy requirement.
>
> A decline in labor and capital mobility, associated with high unemployment and excess capacity, probably likewise contributed to the slowdown in productivity growth. A high employment economy encourages labor and capital mobility and provides the business community an opportunity to increase productivity by employing labor and capital more efficiently.[3]

The Joint Economic Committee Republican Members concluded that the outlook for productivity growth may not be as bad as industrial policy advocates would have us believe. In 1983, U.S. productivity in the nonfarm business sector advanced at a 3.2 percent annual rate. This upward trend is likely to continue because many of the factors that contributed negatively to productivity growth in the past decade are now likely to exert a positive influence. The Joint Economic Committee's *1984 Annual Report* explained the outlook for productivity growth this way:

> First, growth in the Nation's labor force will decelerate since the baby boom has run its course. Second, lower tax rates, reduced government spending, and the vigorous recovery that is now underway will result in an increase in the rate of capital formation. As a result of these two factors, capital per worker should reverse its downward trend and turn sharply upward. The natural maturing of the labor force is another demographic trend favoring a resumption of productivity growth.
>
> Also, the explosive growth of venture capital and high-technology activities, including an expansion of commercial R&D, suggests that improvements in the quality of capital will be substantial. American business is taking a long view and investing in new processes and new opportunities. The result is that technical progress should resume its long-term historical role as a major contributor to productivity growth in the years ahead.
>
> Moreover, the policy environment has been stabilized in recent years with much greater emphasis on promoting competition through deregulation and international trade. Joint ventures in R&D and in production are being encouraged in those cases where scale economies are necessary for competition. Also, much of the hard work of bringing down inflation to permit more orderly economic growth is behind us. The Republican Members believe that a policy environment that relies on competitive markets is essential to spur technological innovation, long-term capital formation, and productivity growth.

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[3] U.S. Congress, Joint Economic Committee, *The 1984 Joint Economic Report*, Report of the Joint Economic Committee (Washington, D.C.: Government Printing Office, 1984), pp. 52-53.

Other factors, like environmental regulations and high energy costs, are still with us, but, they are not likely to be a major burden on productivity growth in the near future. Also, much of the new capital requirement to meet energy and environmental objectives is already in place. More capital market resources are now free to flow into productivity-enhancing investments than in the past.

Other qualitative factors are important in suggesting an abrupt turnabout in long-term U.S. productivity growth. American management has done much to shift emphasis to product quality, cost cutting, and ways to develop incentives to encourage worker productivity. Also, labor has made painful concessions at the bargaining table that should encourage productivity growth.

Another positive factor is the recent attention given to the quality of education in America. The outcome of this public awareness of the need to improve educational quality and overcome major deficiencies in math and science training will likely be a better educated and more productive labor force in the 1980's.

Finally, the economic development activities of State and local governments are likely to improve productivity growth. State and local governments are placing much more emphasis in recent years on the role of technological progress in the development of their regions. This effort is being translated into more support for R&D and more efficient land-use regulations. The central thrust of these actions is to remove technological and labor market barriers for economic development and allow the market to exploit these State and local government actions. These are only a few of the many positive factors pointing to a resumption of productivity growth in the United States.[4]

In conclusion, industrial policy arguments for microeconomic fine tuning, based upon the belief that the interventionist policies of foreign governments are the cause of U.S. economic problems, must be rejected because they are based upon a misrepresentation of the facts about long-term U.S. industrial performance. The path to a higher rate of economic growth and a higher level of productivity can only come through macroeconomic policies that encourage capital formation, technological progress, and human resource development. More direct government intervention into the Nation's capital markets—in the name of economic cooperation councils or industrial development banks—is no substitute for policies that promote economic growth by increasing saving and investment.

Structural Change

The shift in U.S trade patterns mirrors important changes in the structure of the domestic economy. Resources have been flowing to the R&D intensive and high-tech oriented sectors and away from basic goods manufacturing (e.g., steel). Overall, the manufacturing sector performed quite well. Value added in manufacturing has remained at about 24 percent of GNP since 1950. Moreover, employment in manufacturing increased each decade since 1950. When compared with the long-run, or secular decline in manufacturing jobs in many European countries, the U.S. experience in manufacturing is even more impressive (See Table IV). Thus, while service jobs have increased much faster than manufacturing jobs, manufacturing remains a dynamic source of employment opportunities for America's workers (See Table V).

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[4] *Ibid.*, pp. 53–54.

TABLE IV.—TOTAL AND MANUFACTURING JOB GROWTH IN THE UNITED STATES, JAPAN, AND OTHER INDUSTRIALIZED NATIONS

[1960 to 1982]

	1960 to 1980	1970 to 1980	1980–1982
Percent change in total employment:			
United States	19.5	24.9	0.3
Canada	32.7	34.5	–.8
Australia	N/A	16.0	2.2
Japan	14.8	8.7	1.8
France	9.4	3.9	–.9
Germany	1.6	–1.4	–2.4
Great Britain	2.7	1.3	–6.3
Italy	–4.9	7.0	.0
Netherlands	12.4	1.9	–3.1
Sweden	7.1	9.8	–.3
Percent change in manufacturing employment:			
United States	20.1	5.8	–7.5
Canada	20.2	19.1	–8.5
Australia	N/A	–7.3	–2.3
Japan	45.8	–.9	.8
France	7.8	–3.8	N/A
Germany	9.8	–9.5	N/A
Great Britain	–4.6	–18.1	–16.0
Italy	10.0	3.6	–3.8
Netherlands	4.0	–19.7	N/A
Sweden	–5.0	–3.7	–7.7

Source: Bureau of Labor Statistics, Statistical Supplement to International Comparison of Unemployment Bulletin, September 1983.

N/A: Not available.

TABLE V.—EMPLOYEES ON NON-AGRICULTURAL PAYROLLS BY INDUSTRY DIVISION, 1930–1980

[All figures in thousands]

	1930		1940		1950		1960		1970		1980	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	29,409	100.0	32,361	100.0	45,197	100.0	54,189	100.0	70,880	100.0	90,564	100.0
Goods-producing	11,958	40.7	13,221	40.9	18,506	41.0	20,434	37.7	23,578	33.3	25,718	28.4
Mining	1,009	3.4	925	2.9	901	2.0	712	1.3	623	0.9	1,020	1.1
Construction	1,387	4.7	1,311	4.1	2,364	5.2	2,926	5.4	3,588	5.1	4,399	4.9
Manufacturing	9,562	32.5	10,985	33.9	15,241	33.7	16,796	31.0	19,367	27.3	20,300	22.4
Service-producing	17,451	59.3	19,140	59.2	26,691	59.1	33,755	62.3	47,302	66.7	64,847	71.6

Source: Department of Labor, Bureau of Labor Statistics, Employment and Earnings, July, 1981.

Within manufacturing, some industries have been expanding and others have been contracting. From Table VI, it is clear that U.S. manufacturing is becoming more technologically sophisticated and skill-intensive. The high-tech sectors increased their share of total manufacturing value added from 27 percent in 1960 to 33 percent in 1980. The heavy goods industries, which tend to be capital, labor and/or resource-intensive, have declined in their relative contribution to value added in manufacturing.

TABLE VI.—SHARES IN U.S. MANUFACTURING VALUE-ADDED AND EMPLOYMENT

	Value-added [1]					Employment [2]		
	1960	1970	1972	1973	1980	1972	1973	1980
Process:								
High technology	.27	.31	.31	.32	.38	.28	.29	.33
Capital intensive	.32	.30	.31	.32	.27	.30	.30	.28
Labor intensive	.13	.13	.14	.13	.12	.21	.21	.19
Resource intensive	.28	.25	.24	.23	.23	.21	.20	.20
End use:								
Consumer nondurables	.20	.17	.17	.15	.15	.19	.19	.17
Consumer durables	.03	.04	.04	.04	.05	.05	.05	.05
Automobiles	.07	.06	.07	.08	.05	.05	.05	.04
Equipment	.19	.22	.21	.21	.24	.20	.20	.23
Intermediate products	.51	.51	.51	.51	.50	.51	.51	.52

[1] Value-added computed the 85-industry-level I-O divisions by multiplying gross output in constant dollars by the ratio of value-added to output in the 1972 I-O Table.

[2] Employment numbers derived from the Bureau of Labor series on employment and earnings aggregated to the two-digit I-O divisions and then to the process and end-use categories.

About one-half of manufacturing output is in the form of intermediate products to be used in other industries and sectors. Intermediate products maintained a constant share of manufacturing value added over the years. In the final use categories, equipment and consumer durables have been expanding more rapidly. Consumer non-durables and automobiles have declined in the relative output mix of the manufacturing sector.

The high-tech sectors have also increased their significance as a source of jobs in manufacturing. The high-tech sectors increased their relative contribution to manufacturing jobs from 28 percent in 1972 to 33 percent in 1980. In general, the high-tech sectors are identified as being more dependent on R&D inputs and highly skilled labor (scientists, engineers, and technicians).

A major complaint of industrial policy advocates is that the U.S. economy is suffering from major structural rigidities. Although they fail to explain what the structural problems are, industrial policy proponents are united in their belief that the American economy can no longer adapt to changing international, technological, and market forces. Fortunately, the record of U.S. structural change has proven that the U.S. economy is not inflexible and rigid. Tables V and VI reveal the following characteristics of industrial change in the United States:

> Industrial change is not a recent phenomenon. The U.S. economy has been in transition for decades. Some industries expand while others contract. This is a normal process in a dynamic, growing economy and it is a sign of a healthy, not a diseased, economy.
>
> Historically, industrial changes proceeded at a snail's pace. It is best described as a continuous, adaptive process. The adaptive nature of structural change is important because it

allows resources to flow among the sectors without causing major aggregate disruptions in labor markets.

The pace of industrial change has neither significantly speeded up nor slowed down in recent years. The long-term secular trends reveal a remarkably stable process of continuous structural adjustment. Manufacturing and other goods producing sectors have been declining steadily as a source of jobs; whereas, the service producing sectors, such as finance, insurance, services and real estate, have been expanding as a source of jobs. Jobs in the manufacturing sector have not declined; they have been growing at a slower pace than in the service sectors. (Table V)

From a national perspective, these industry transformations add up to a more efficient industrial structure for the United States. Fortunately, the American economy is blessed with a high degree of capital and labor mobility that allows its industrial structure to evolve into a more efficient pattern—as dictated by competitive markets—without causing severe structural adjustment problems.

One of the major problems with industrial policy is determining the desired rate of industrial change. Some advocates want to speed-up structural change and others want to slow it down. It would seem that the best structural adjustment policy is one that allows competitive markets to dictate the pace of industrial change. A competitively determined industrial structure has the advantage of promoting an efficient allocation of resources among competing industries. Improved allocative efficiency, in turn, contributes to economic growth and U.S. competitiveness by improving productivity and by matching society's output mix with consumer preferences.

U.S. TRADE FLOWS

Over the period since World War II, the U.S. economy has become increasingly integrated into the world economy. U.S. exports and imports rose from about 5 percent of GNP in 1950 to about 12 percent in 1983. The volume of world trade grew even faster. The result was a fall in the U.S. share of world trade from about 25 percent in 1950 to about 12 percent in 1983. While the U.S. economy is more "open" than it was in the past, its direct dependence on international markets remains much less than for most other industrialized nations.

The growing dependence of the world's economies on international trade reflects the increasing degree of specialization among the nations. Each of the nations is engaged in a competitive struggle that demands changes in their domestic economies and in their export and import sectors. How an economy responds to the international challenge is quite telling of its ability to be flexible and adjust to changing economic circumstances.

Table VII shows that the U.S. economy has been quite flexible in adapting to a changing international economic climate.[5] In the pre-

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[5] For a more complete discussion of long-term trends in U.S. trade performance, see William H. Branson, "The Myth of Deindustrialization," *Regulation* (AEI Journal on Government and Regulation), September/October 1973, pp. 24–54, and Robert Z. Lawrence, "Is Trade Deindustri-

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World War II period, the United States had a comparative advantage in the new emerging industries of that day—automobiles, capital equipment, and military goods. The older consumer goods industries at that time were dominated by the other nations because of their advantage in unskilled, labor intensive manufacturing. The pre-World War II trade pattern also clearly reveals that the United States as a nation had a comparative advantage in agriculture and in the high-technology end of manufacturing. The basis of U.S. comparative advantage could be found in the relative abundance of productive land, technology, and skilled labor.

TABLE VII.—TRENDS IN THE U.S. TRADE BALANCE, 1930–81

[In millions of dollars]

Year	Agricultural goods	Fuels and lubricants	Chemicals	Other	Capital goods	Consumer goods	Automotive products	Military goods	Total [1]
1930	15	433	3	−271	518	−92	282	7	782
1937	−459	395	22	−184	486	−38	353	22	265
1947	1,604	1,013	553	890	3,144	958	1,147	174	9,530
1960	857	−739	1,128	−1,226	4,949	−505	633	804	5,528
1970	558	−1,384	2,216	−3,163	10,557	−4,834	−2,242	1,230	3,303
1973	8,023	−6,369	3,137	−5,854	13,928	−8,481	−4,543	1,385	1,863
1981	24,308	−71,333	11,995	−13,325	45,680	−22,864	−11,750	3,608	−27,566

[1] Total figures reflect two categories that are not included in the table and that showed a surplus of $6.2 billion in 1981.

Source: Department of Commerce, "Highlights of U.S. Export and Import Trade," FT–990.

World War II disrupted the pattern of international specialization and trade in manufactured products. The United States became a net exporter of all the major categories of tradeable products. Clearly, in 1947, the United States enjoyed an economic position in world markets unparalleled in its history.

U.S. economic hegemony following World War II was based upon the ravage of Europe and Japan and not upon the long-term comparative advantage of the United States. As Europe and Japan rebuilt, they regained many of their old markets and established a niche in some of the new emerging markets. For the United States, this ultimately meant a resumption of trade deficits in consumer goods and other industrial supplies. (See Table VII.)

Trade deficits in automobiles also began to emerge in the 1970's as technology in that industry became highly standardized and widely diffused among the nations. Trade deficits also emerged in fuels and lubricants, reflecting America's growing dependence on foreign oil. Nevertheless, in 1970, the United States continued to enjoy a balance of trade surplus in goods with other nations. By 1970, the pre-World War II trade pattern had been reestablished with the United States once again maintaining a comparative advantage in agricultural products and high-tech manufacturing, particularly in chemicals, capital goods, and military goods. Overall, U.S. competitiveness in international trade in 1970 was as strong as ever.

The dynamism and competitiveness of the U.S. economy became even more apparent in the 1970's. The impact of the oil embargo

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alizing America? A Medium-Term Perspective," *Brookings Papers on Economic Activity,* 1:1983, pp. 129–171.

resulted in an increase in the cost of fuel and lubricants by nearly $65 billion from 1973 to 1981. This enormous growth in fuel costs had to be paid for by vigorous expansion in exports in those sectors in which the United States had a worldwide advantage. The response of the American economy was remarkable. Trade surpluses in agricultural products increased by $16.3 billion. Trade surpluses in chemicals were up $8.8 billion. Trade surpluses were up over $31.8 billion for the capital goods industries, and military trade surpluses expanded by approximately $2.2 billion. The net result was not a balance of trade deficit of approximately $65 billion, but a trade deficit of only $27.5 billion by 1981. Thus, while U.S. imports of automotive parts, consumer goods, and other industrial supplies and materials increased sharply, U.S. exports of agricultural goods and high-tech manufactured products increased at an even faster pace. Fortunately for the United States, trade surpluses in services also expanded rapidly after 1973. As a result of these factors, the United States enjoyed a balance of trade surplus in goods and services of $11.5 billion in 1981.

The analysis of U.S. export and import flows reveals that the economy is flexible and quite capable of adapting to changing national and international conditions. The industrial policy vision of the U.S. economy losing its competitiveness because of structural deficiencies is not supported by data on long-term U.S. trade performance.

JOB CREATION

The most dramatic evidence that the U.S. economy is adaptable and competitive is found in the data on job creation. According to Table IV, presented earlier, total employment in the United States increased by 20 percent from 1960 to 1970 and by 25 percent from 1970 to 1980. Thirty-three million more workers were employed in 1980 than in 1960. The U.S. economy generated more jobs in the last 20 years than all of the other industrialized nations combined. Of the other industrialized nations listed in Table IV, only Canada had a brisker rate of total job growth. Japan, Germany, and France, among others, experienced total job growth at a considerably slower pace.

The 1982 recession resulted in a reduction in U.S. employment, but four million workers found jobs in 1983. The continued expansion of the U.S. labor markets provides strong evidence of continued U.S. competitiveness and vigor.

Data on U.S. unemployment contradicts the assumption that the United States is suffering from massive long-term structural unemployment. The unemployment rate in the United States has edged upward in the last decade. The upward secular trend was accompanied by an increasingly wide cyclical pattern in U.S. unemployment. This disturbing trend is often cited as evidence that the pace of U.S. industrial change is outstripping the ability of workers to adjust.

While the facts about U.S. unemployment rates edging upward since the 1960's are undeniable, it would be a mistake to attribute this trend to structural deficiencies in the economy. Over the period, all of the industrialized nations experienced a secular rise in their unemployment rates. Second, over the last several decades, woman and youth entered the labor market in unprecedented numbers. These groups initially can be expected to experience higher unemployment rates. Third, the rapid pace of job creation in the United States has provided new opportunities for upward mobility for a larger portion of the work force. The prospects of finding a better or more suitable job entices many workers to quit and search for new opportunities. The propensity of American workers to change jobs is an important factor in explaining the comparatively high U.S. unemployment rate. Finally, the structural transition of the U.S. economy has given a large number of individuals no choice but to draw unemployment checks while they look for a new job. All of these factors combine to create upward pressure on the Nation's unemployment rate.

Institutional factors have also contributed to the upward trend in the unemployment rate. Minimum wage laws unquestionably raise youth unemployment and keep many older and less skilled workers from finding reemployment very quickly. Also, the unemployment compensation system, including generous supplementary benefits, provides a powerful incentive for workers who become unemployed to take their time in finding a new job. Because of the cushion, employers are encouraged to "stockpile" workers through layoffs hoping that the companies' condition of depressed demand will be temporary.

Perhaps more important to the industrial policy debate is the comparatively large differential between short-term and long-term unemployment rates. In Europe and other industrialized countries, the mean duration of unemployment is more than twice the mean duration in the United States. According to a recent study by Janet Norwood, Commissioner of Labor Statistics, the average American worker is out of work 22 weeks, but in Europe the average is 39 weeks.[6] The percent of people in Europe who are unemployed for more than a year is five times the U.S. experience. Thus, while the United States has a higher overall unemployment rate, a much higher proportion of the unemployed find reemployment in a relatively short period of time. The long-term unemployment rate in the United States is much lower than it is in the other industrialized nations. It also consists of a disproportionately large number of youths and minorities.

In general, U.S. labor markets are very dynamic, flexible, and capable of absorbing unemployed and displaced workers within a relatively short period of time. Long-term structural unemployment, although a large problem, is much less of a problem in the United States than it is in Europe and other industrialized nations.

This general overview of U.S. labor market dynamism clearly indicates that structural change is not leading to a massive increase in structural unemployment in the United States. In fact, labor market mobility is an important factor in the ability of the American economy to adapt to changing economic conditions. It allows resources to move more quickly to the sectors in which the United States is experiencing a comparative advantage. These necessary structural changes are occurring without imposing unduly high adjustment costs on American labor in the form of high long-term structural unemployment.

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[6] Janet L. Norwood, "Labor Market Contrasts: United States and Europe," *Monthly Labor Review*, August 1983, p. 6.

Knowing that the economy can adjust to a new environment without major disruptions is no consolation to those workers and their families who are suffering from economic change. Many workers become displaced by economic change and are unable to find their way back into the mainstream of economic life. These workers are in need of government assistance in the form of training and labor market information. Current labor market policy recognizes the needs of the displaced worker and is attempting to meet these needs through the Job Training Partnership Act. A series of Joint Economic Committee hearings focused on how the States, working with the business community, are shouldering their new responsibilities.[7] The testimony from the witnesses was very encouraging although all of the witnesses agreed that close monitoring of progress under the Job Training Partnership Act is necessary before firm conclusions can be made.

SUMMARY AND CONCLUSIONS

In summary, the American economy has exhibited remarkable resiliency and dynamism over the decades since World War II. Contrary to the claims of industrial policy advocates, the American economy is not inflexible and incapable of responding to changing economic conditions. America is not deindustrializing and it is not losing its competitiveness in world markets.

The U.S. trade performance since World War II amply demonstrates the flexibility and competitiveness of the American economy. The U.S. balance of trade in goods and services became negative in 1982, and the negative gap widened in 1983. The recent setbacks in the balance of trade are associated with the brisk recovery, high interest rates, and a strong dollar. They are not a reflection of a long-term decline in U.S. competitiveness.

In the 1970's while the United States was supposed to be suffering a loss of competitiveness, U.S. exports of high-tech manufactured products, such as chemicals and capital goods, soared. U.S. imports of low technology manufactured products, such as autos and steel, increased at a slower pace. The result was a growth of large surpluses in net exports of manufactured products. The surplus was not sufficient to offset all of the $65 billion increase in fuel imports since 1973, but it held the balance of trade deficit in goods in 1981 to under $29 billion. Fortunately, over the 1973 to 1981 period, U.S. trade surpluses in service products expanded rapidly, too. As a result, in 1981 the United States experienced a trade surplus in goods and services.

The American economy displayed its resiliency and adaptability in other important ways. Growth in exports and imports as a percentage of GNP meant that American industry would have to specialize according to comparative advantage. Industries did just that. The American manufacturing sector has been shifting to the advanced end of the technology spectrum, or to the early stage in the product development cycle, for decades. The result has been growth in high-tech manufacturing and gains in foreign markets for American firms.

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[7] U.S. Congress, Joint Economic Committee, *Industrial Policy: The Retraining Needs of the Nation's Long-Term Structurally Unemployed Workers,* Hearings, 98th Congress, 1st session, September 16, 23, 26, and October 26, 1984.

In the 1960's and 1970's, the United States experienced a labor force boom of unprecedented scale. The baby boom of the post-World War II period was maturing and providing large numbers of young, inexperienced workers in the labor force. The participation rates of women and blacks increased substantially adding to the expected bulge in labor force growth.

In the early 1960's, experts anticipated major structural adjustment problems. A clash between technological change and labor force growth in the decades ahead was predicted by many experts. The primary concern was that technological change would destroy jobs at a time when labor force growth was expanding rapidly. The expectation was that massive long-term structural unemployment lay ahead. Fortunately, the American economy confounded the experts. It became the most prolific generator of jobs of any industrialized economy in history. Over 33 million more workers were employed in 1980 than in 1960. The 1982 recession reduced employment growth, but in 1983 it snapped back sharply. About 4 million workers found jobs in 1983 as a result of the brisk recovery. Jobs in the service sector grew faster than in the manufacturing sector, but manufacturing employment increased each decade.

Several important lessons can be gleaned from the U.S. experience with growth and change since 1950. First, the facts on the transformation of the American economy do not square with any of the major assumptions of industrial policy. Second, structural adjustments are a natural outcome of dynamic, competitive market forces resulting from changes in consumer preferences, technology, and international competition. In a competitive economy, resources flow to their "best and highest" use. Thus, the economy that emerges from structural adjustments is always more capable of responding to the new competitive forces than the economic structure that it replaces.

Third, technological change is necessary for job growth in a healthy, dynamic economy. Technological change increases competitiveness by stimulating productivity growth and improving product quality.

Fourth, there is no evidence that the United States is deindustrializing. The manufacturing sector remains a dynamic source of output growth and net job creation for the United States. The fact that employment growth in manufacturing lagged behind growth in industrial production over the years reflects gains in productivity in the manufacturing sector and not a loss of competitiveness. As we have seen, productivity growth is a central factor in improving the competitiveness of the overall economy, and it is not indicative of deindustrialization.

Finally, the industrial policy advocates are correct in pointing out that overall U.S. economic growth performance has not been what Americans expect. They are wrong, however, in suggesting microeconomic fine-tuning as the solution. Macroeconomic policies to encourage economic growth are necessary. If the industrial policy debate does nothing more than reaffirm the importance of capital formation, technological change, and human resource development to economic growth, it will be worthwhile.

V. JAPANESE INDUSTRIAL POLICY

Japan has experienced phenomenal economic growth since World War II. Many attribute this growth to an "industrial policy" pursued by the Japanese Government, and in the face of the economic problems in the United States during the 1970's and early 1980's, some experts are recommending that the United States employ an industrial policy, following the successful Japanese example.

However, contrary to popular opinion, Japan does not have an effective, coherent industrial policy. It may have had one at one time, but not in the last 10 to 15 years. It seems that the greatest success of the Japanese Government has been to create a healthy macroeconomic environment that has been conducive to economic growth. Perhaps this is the greatest lesson the United States can learn.

The objective of this chapter is to review the role of monetary, fiscal, and industrial policy in post-World War II Japan. First, Japan's early experience with industrial policy is reviewed. Evidence is presented to show that Japan's dramatic economic growth was primarily the product of coordinated monetary and fiscal policy in tandem with a group of risk-taking entrepreneurs, and not the product of industrial policy per se. Second, the discussion focuses on the changes in Japan's economic policy as the Japanese economy matured and was integrated into the global economy. The next section discusses selected issues in Japanese industrial policy. Specifically, does Japan have a coherent industrial policy? How do "plans" and "visions" enter into Japanese industrial policy? Finally, will the Japanese brand of industrial policy fit the United States?

EARLY JAPANESE INDUSTRIAL POLICY EXPERIENCE

It is important to recognize the origins of industrial policy in Japan. In 1945, Japan was on its knees militarily, socially, and economically. It's key industries were destroyed, food and energy sources were scarce, inflation was rampant, and national pride was at a low ebb. To combat these problems, Japan pursued an industrial policy with the blessing of, and in cooperation with, the Supreme Commander for the Allied Powers (SCAP). As an underpinning to that industrial policy, monetary and fiscal policy were aggressively pursued to encourage business investment, achieve price stability, and improve Japan's balance of payments. During this reconstruction period, industrial planning was introduced, industrial reorganization was undertaken, and the government took control of capital markets.

In these early postwar years, Japanese industrial policy was a very tight-knit institutional and policy arrangement—inspired in part by U.S. occupation policies—designed to lift Japan from the rubble of World War II. It concentrated on allocating resources to businesses, although agriculture also received some special help.

We must keep in mind the sharp differences between the U.S. economy and the Japanese and German economies at the end of World War II. Japan was devastated, and reconstruction of its industrial base had to have priority; housing and other blessings of a thriving economy would have to come later.

The Japanese economic policy mix included import quotas and tariff protection for manufactured products, and differential specific aid to targeted industries. MITI aimed mostly at future "winners," although to some extent, it also helped "losers." Two of the losers in the 1950's and 1960's were cotton textiles and coal mining.

A priority targeted production system, "keisha seisan hoshiki," was developed by an informal advisory group and adopted by both the government and SCAP in 1948.[1] The rationale behind the priority targeted production system was the following:

> Our idea is to concentrate our efforts on increasing the production of coal, which is one of the most important basic materials, and which is present in Japan. We insist that all economic policies should be geared to this purpose. This has the highest priority among policies. This high priority may not be long assigned to this particular policy, and possibly it will not be necessary for a long period. However, when we cannot expect an all-around increase in production because of numerous constraints and difficulties, there is no alternative but to concentrate on a few basic commodities and through the increased production of these items, we may create the possibility of gradual recovery of over-all production activities.[2]

The targeted production program, assigning top priority to coal production, resulted in output exceeding by 3 million tons the then virtually impossible target of 27 million tons. Increased coal supplies, in turn, accelerated the recovery in basic goods production, including fertilizers and cement, helped in rehabilitating the railway system and in general was a boon to the whole economy.

Japan's early postwar industrial policy was a practical response to an overwhelming need for cost-efficient management of resources to speed economic recovery. By the late 1940's, the objective of the Occupation was already shifting from a demilitarization objective to speeding economic recovery because of the onset of the Cold War and the change in U.S. military and foreign policy objectives in East Asia, vis-a-vis the Soviet Union.

During the 1950's and 1960's, Japan's national policy emphasis shifted from economic recovery to economic growth. Accordingly, the nature of Japanese industrial policy went through a metamorphis.

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[1] U.S. Congress, Joint Economic Committee, *Industrial Policy, Economic Growth and the Competitiveness of U.S. Industry*, Hearings before the Joint Economic Committee, 98th Cong., First Session, Part 2, July 13, 1983, p. 53.

[2] Arisawa, Professor Hiromi, "Measures to Prevent Economic Collapse," *Hydron*, January 1947. This was quoted by H. William Tanaka in his testimony before the Committee, *Hearings*, Part 2, page 53.

Monetary policy played a key role in rebuilding Japan's economy at the end of World War II. By keeping interest rates artificially low, the government encouraged business investment and expansion of certain sectors of the economy. To achieve growth in selected industries, the government targeted funds through credit rationing. At that time, businesses were in their early growing stages and were heavily reliant on government loans to finance their investment in the absence of other domestic markets or access to international funds.

Monetary policy was tightly controlled. Fiscal measures were adopted to coincide with long-run monetary policy. Japan's guiding principle was to discourage consumption and encourage investment. The government reached these goals by creating a supportive tax system. Fiscal success was ensured by reducing double taxation on corporate income through special treatment of dividends, a low tax burden to encourage a high saving rate, and encouraging capital gains instead of interest income. Through these measures, the government produced a growing pool of savings and an environment conducive to business expansion.

CHANGES IN JAPANESE INDUSTRIAL POLICY

Indeed, Japan had a strong centrally-directed industrial policy for a decade or so following World War II, and it served that nation well in the early Postwar II reconstruction period. But its industrial policy has changed significantly from those early postwar years. Today, the goals of Japanese industrial policy are more diffused and less well defined than they were in the 1950's. Today, there is preferential treatment for selected key industries, there is a coordinated package of policy instruments, and there are recession cartels to let failing firms down easily. But in terms of breadth and depth, Japanese industrial policy is not today what it was in the early postwar years. As the economy grew and stabilized, the heavy hand of government was gradually lifted and private enterprise was given more head to move forward, with nudgings and "visions" of the future set forth by government. Professor Hugh Patrick of Yale University outlined some of these changes in his testimony before the Joint Economic Committee, and the following points are taken from his July 13, 1983 testimony.[3]

The goals of Japanese economic policy have widened in recent years, with greater emphasis on small business, environmental control, and social welfare. Government attention is focused on macro problems associated with huge budget deficits and on "administrative reform."

MITI tries to identify and support the industries of the future, especially high-tech industries. But governmental resources in fact now go more to the losers, those in difficulty, than to the potential winners. Aid is dispensed primarily to the structurally depressed industries hit by high energy costs (aluminum, petrochemicals, etc.), low world demand (shipbuilding), or high labor costs (textiles and simple assembly operations). And almost all government subsidy payments go to agriculture.

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[3] U.S. Congress, Joint Economic Committee, *Industrial Policy, Economic Growth and the Competitiveness of U.S. Industry*, Hearings before the Joint Economic Committee, 98th Cong., First Session, Part 2, July 13, 1983, pp. 12–43.

Direct subsidy payments have never been very important in Japanese industrial policy, and given the budgetary crisis, they are unlikely to be important in the future. Special tax benefits are increasingly resisted by the Ministry of Finance, who is currently obsessed by large budget deficits. The differential between commercial banks and government lending interest rates has become so narrow for large firms that government loans have far less benefit than earlier.

Nonetheless, MITI continues to have important policy instruments at its disposal, particularly its ability to subsidize and encourage commercially-oriented R&D in high tech industries. And in a recently enacted law for structurally depressed industries, MITI obtained powers to encourage mergers and help a few major selected industries in ongoing trouble because of loss of international competitiveness.

The policy environment for industrial policy has changed a great deal from the earlier, high-growth era. There is no longer the overwhelming focus on rapid growth; other objectives have become more important. Business is now perceived as able to grow on its own. Unlike earlier, savings are now in ample supply; the problem is to encourage businessmen to invest rather than to ration credit to them. Big business now is strong and independent; it does not want to be beholden to or dependent upon MITI or other government officials.

One of the most important changes in the policy environment is that Japan is no longer insulated from the rest of the world. Foreign governmental pressures—especially American—have intruded upon the cozy domestic arrangements that have been so much a part of Japanese industrial policy. Japan is now a major world economy and world trader rivaling the American and European economies in steel and cars and increasingly in semiconductors, computers, telecommunications, and other high-tech areas. Its actions, policy and otherwise, inevitably invite scrutiny and, at times, reactions from the United States and others. Japan has truly become an interdependent member of an interdependent world. As one of the three pillars of the international economic order—together with the United States and the Western European industrial democracies—Japan is finding that it can no longer use trade policy as an instrument of industrial policy; it must reduce trade barriers, not raise them.

The Japanese automobile industry illustrates one of the major problems of a strong industrial policy—the inability of government bureaucrats to outguess the market in picking winners and losers.

MITI planners rebuffed early efforts by Japanese auto makers to begin exporting their cars on grounds that there wasn't likely to be much of a world-wide market for them. Also, starting in 1962, MITI "targeted" the automobile industry as a winner, but erred in a structural reorganization by pressing manufacturers to merge—a policy that failed in the face of industry resistance. Only three small mergers occurred during the 1960's. New firms, such as Honda (motorcycles) and Toyo Kogyo (machine tools), entered the automobile business against strong resistance by MITI. Then, in

1969, the straw that broke the camel's back was Mitsubishi's joint venture contract with Chrysler to produce the Dodge Colt. This and the Honda and Toyo Kogyo entries into the automobile business are what finally caused MITI to abandon its automobile industry consolidation policies.

After 1969, with MITI no longer meddling, the Japanese automobile industry began the technical innovation and aggressive marketing which eventually made the Japanese auto industry a world class performer.

SELECTED ISSUES IN JAPANESE INDUSTRIAL POLICY

Discussions of Japanese industrial policy invariably turn to questions of coherence, the importance of "visions" and the possibility of transferring Japanese-style industrial policy to the U.S. A discussion of these questions follows.

JAPAN DOES NOT HAVE A COHERENT INDUSTRIAL POLICY

Dr. Philip Trezise of Brookings Institution, who testified before the Joint Economic Committee on July 13, 1983, examined the use of policy instruments in Japan and found that Japan does not now have a coherent, coordinated, long-run strategy, as is often believed.

Subsidies would be at the heart of any industrial policy, but Trezise shows subsidies going to the following sectors in the following order: agriculture, energy, small business, and national railways. Trezise argues that the rationale for these subsidies cannot be economic efficiency. He indicates, ". . . rice is produced for three to four times the price prevailing in world markets." Energy subsidization stems from Japanese politicians' sensitiveness to their dependence on foreign fuel sources. Trezise says it would exist "even if the term industrial policy had never been invented." He feels the rationale for small business subsidies is largely political. And Trezise doubts that heavy subsidies to the Nation's railways can be part of ". . . a carefully designed industrial policy."

On publicly funded research and development, Trezise noted that Japan is last among major industrial countries in publicly financed research and development in relation to GNP, and that Japan's public R&D, even after adjusting for the disparity in military R&D, is less than half that of the United States in relative terms. On the other hand, private R&D in Japan has surpassed the United States in relative terms.

Trezise further argues that Japan's public R&D is not ". . . meticulously aimed at commercial goals." The Ministry of Education disburses roughly half of Japan's public R&D spending, mostly in the form of general grants to universities for administration, libraries and salaries. About a quarter of the R&D budget goes to the Science and Technology agency, in charge of space and oceanic R&D and large amounts to energy R&D. Trezise indicates that during the current fiscal year, the Ministry of Agriculture is scheduled to receive 4 percent of all public R&D money, twice the share requested for agriculture in the U.S. budget.

Trezise further points out that MITI, which is supposed to be the architect of industrial policy, had control over only 12 percent of public R&D in fiscal 1983. Of that amount, over half was spent on energy projects. According to Trezise, ". . . that leaves maybe $350 million or so for all the multifarious things that MITI is popularly supposed to do in the way of providing R&D in support of manufacturing industry." Trezise finds it hard to believe that these ". . . relatively modest sums have had great influence on Japan's successful manufacturing industry."

Trezise also concludes that no highly articulated and coherent approach is found in Japan's tax policy. The tax benefits have been selective, he argues, but they have not been targeted uniformly at future industries, as is commonly believed. Japan's tax code provides for a wide range of tax benefits: tax exemptions, tax credits, accelerated depreciation, depletion allowances, and tax free reserves. But, in addition to logically cited sectors such as steel, chemicals and machinery, tax benefits have been given to several industries that can hardly be said to be industries of the future. The list includes agriculture, merchant shipping, restaurants, textiles, and forestry. In fact, tax credits for investment in Japan are limited to industries designated as "permanently depressed," to certain small and medium businesses, or to special depreciation allowances for certain kinds of energy or oil conserving equipment.

The key to Japan's industrial policy and its economic success is sometimes said to be concessional or preferential lending by the Japanese Development Bank (JDB). Trezise argues that the operations of the JDB cannot be viewed as ". . . a highly focussed form of industrial policy." He points out that 88 percent of the JDB's $5.1 billion of loans for 1981 went for what he calls, ". . . public infrastructure projects," i.e., urban and regional renewal and development, energy, and quality of life projects. The remaining 12 percent, roughly $600 million in 1981, was devoted to high tech and related activities, which might be considered the key objectives of a selective industrial policy. But when related to total private plant and equipment investment spending, which was about $180 billion in 1981, Trezise concludes that the $600 million in loans do not appear to be ". . . a decisive amount for shaping Japan's industrial future."

On import protection, Trezise argues that during the 1950's and 1960's, Japan was protective of both infant and established industries. Since the liberalization of the 1970's, however, Japan is a country of relatively low tariffs and few official barriers to imports, except agriculture, processed foods, and certain semi-conductor manufacturers. Regarding targeted protectionism, Trezise says:

> The assertion that Japan protects only the growth industries and willingly allows the weak sisters to be discarded, to be killed off, is simply fiction.[4]

Trezise concludes that it cannot be said that formal, official protection is a significant feature of Japan's industrial policy.

Regarding competition policy, Trezise states:

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[4] *Ibid.*, page 73.

> . . . the general thrust of official thought in Japan has been toward worry about "excessive competition" and toward a possibly exaggerated faith in economies of scale.[5]

Thus, government policy has emphasized ways to limit competition and foster bigness. However, he points out that in spite of the official drive to restrict competition, sectors such as textiles and small firms are still as numerous as ever. For example, in the clothing industry, which has been the target of government pressure for greater consolidation for decades, there are more small firms today, both in relative and absolute terms, than there were 30 years ago.

Competition policy is also used to help smooth the decline of sunset industries. At the present time, the Japanese government is trying to direct an orderly reduction in capacity in industries like aluminum, petrochemicals, and chemical fertilizers, through shared plans of scrapping protective facilities. Trezise feels that it is unclear whether such policies make more economic sense than leaving the decline of industries to market forces.

PLANS AND VISIONS

Finally, an industrial policy would seem to call for a plan or blueprint to guide industry day-to-day or month-to-month. However such guidance in Japan is, at best, nebulous. Every now and then, usually after a new Prime Minister takes office, the Economic Planning Agency prepares a multi-year Economic and Social Plan. Trezise says, however, that the term "plan" is a misnomer. These documents discuss trends and problems, economy-wide and in some cases sectoral, and suggest broad courses of action, often heavily qualified (because a number of ministries have a hand in the preparation). It is hard to draw a focussed industrial plan out of this.

On an occasional basis, MITI issues "visions" of the future for the industrial part of the economy. But, according to Trezise, they are "committee documents," with all that implies, that roam loosely over the economic and political horizon and are not much more than collections of platitudes.

Professor F. Gerard Adams, of the University of Pennsylvania, on the other hand, feels that the visions of MITI have been somewhat helpful to the Japanese economy. In fact, he states that one of the major lessons the United States can learn from Japan's experience with industrial policy can be derived from these visions. When Japan opted to nurture an integrated industrial structure to gain world competitiveness and exploit productivity gains of modern high technology, Adams states, ". . . such a view was built into the 'vision' of MITI" which he defines as ". . . a broad overview of the goals and needs of the Japanese economy." MITI's vision thus became the basis for Japanese industrial policy. These visions have changed with the economy to meet its needs and to anticipate future trends. Adams states, ". . . the visions of the MITI have been useful to show the direction in which the economy should aim."

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[5] *Ibid.*, page 84.

Nonetheless, Trezise does not feel that MITI's visions have had a large impact on the Japanese economy. As he told the Committee:

> In any case, it's very hard for me to believe that firms like Nippon Electric or Matsushita or Komatsu or others among Japan's industrial giants, really are willing to risk large sums of their funds on investments solely because some Government bureaucrats have had a vision.[6]

Then Trezise concludes with these comments:

> So I come out with the view that while Japan's industrial policy is an interesting subject, one that has preoccupied a number of American observers and many Japanese as well, there isn't much that our Government is going to learn from it. We do many of the things that the Japanese do. We do them probably as badly as the Japanese. And it's not clear to me that they make any more sense here than they do in Japan.[7]

Dr. Trezise has raised another important point, which deserves some attention. Even if Japanese industrial policy can be tabbed a smashing success, the question is, does the Japanese experience have relevance for a U.S. industrial policy? The answer of the witnesses who appeared before the Joint Economic Committee is a resounding "No."

JAPANESE INDUSTRIAL POLICY WOULD NOT FIT IN THE U.S.

Professor Patrick made perhaps the best case on this, citing a number of reasons for not applying "Japanese lessons" to the United States.[8]

First, if industry-specific industrial policy has not made a major policy contribution in Japan's tightly controlled society, and the above analysis indicates it has not, we cannot expect any better in the more loose-knit U.S. society. U.S. ideology, institutional arrangements, and governmental administrative structure are not conducive to a tight-knit industrial policy.

Second, much of the historic reasoning for Japanese industrial policy has been the shortage of capital and an inadequate financial institution framework for allocating capital in the best manner. The United States has well developed financial markets, so has less need of industrial policy for this purpose.

Third, it is easier for a nation to pick potential future winner industries when it is in a "follower" or "catch up" position. It can analyze the industrial structure of more advanced nations to learn its potential for future competitiveness. The United States is on the technological frontier. No other country is ahead of us to emulate, not even Japan. The marketplace can judge what the industries of the future should be better than can the bureaucrats.

Finally, as Japanese industries have become stronger, there is less need for government protection, guidance, and aid. For a nation in the industrial and technological forefront, protectionist policies are not appropriate and, in fact, may be self-defeating. Thus, Japan has been moving away, albeit slowly, from the very restrictive import policies of the 1950's and 1960's. Certainly, the United States does not want to move in that direction when Japan is moving away from it.

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[6] *Ibid.*, pp. 73–74.
[7] *Ibid.*, page 74.
[8] *Ibid.*, pp. 38–43.

LESSONS TO BE LEARNED FROM JAPANESE INDUSTRIAL POLICY

There are some important lessons that we can learn from the Japanese experiment with industrial policy, as follows:

1. Enhanced incentives for saving and investment are more important to the overall health of the Nation than any form of specific industry aid or incentives, and they have certainly been more important to Japan's economic success than Japan's so-called "industrial policy." Japan saves nearly twice as much of its gross income and three times its personal disposable income as the United States, and, understandably, its long-run productivity growth has been well above ours since the 1960's. Japan has also been very supportive of policies that enhance commercial research and development and technological innovation. The United States would be well advised to emulate these aspects of Japanese policy if it wishes to achieve a higher growth for the future than in the past decades.
2. Investment in human capital is as important as investment in physical capital. Our elementary and secondary educational system must be improved to provide better trained and better qualified individuals for the demands of a modern, high-tech society. The education gap with Japan must be closed.
3. The United States should concentrate on the fundamentals. Effective execution of the fundamentals is just as important as the "game plan" in succeeding in international competition. Foster institutions and policies within which entrepreneurs can operate efficiently, investors can invest freely, and, in general, the economy can grow.
4. It is important to think through long-run strategies of how a society and economy should develop. Business should undertake a long-run perspective in its management decisions. Moreover, product quality should be just as important as quantity in achieving long run business success.
5. One other useful proposal came out of the Committee hearing on Japanese industrial policy. The United States and Japan can advance both economies better by cooperative arrangements and partnerships than by destructive protectionist battles. Japan has more to fear from the competition of Taiwan, Korea and other Southeast Asia developing nations than they do from the United States. H. William Tanaka told the Committee that technological and commercial linkages between U.S. and Japanese companies can increase technology transfer inflows into the United States and can help upgrade U.S. productive facilities.

CONCLUSION

In conclusion, the predominant source of success of the Japanese economy in the late postwar years and up to the present time is the entrepreneurial vigor of private enterprises that invest a great deal of money and take enormous risks. The main role of government has been to provide an accommodating and supportive environment for the market, rather than providing leadership or direction. Government planning has been important to a few industrial sectors, but not to most sectors, which have flourished on their own.

The name of the game for vigorous economic development is sound monetary and fiscal policy and other macro policies to increase the quantity and especially the quality of the factors of production—labor, capital, and natural resources. Thus, while the typical perception of industrial policy rests on micro policies, for the United States it is macro policy that is the key to our future economic success.

VI. STATE AND LOCAL INDUSTRIAL DEVELOPMENT PRACTICES

In the preceding chapter, the Japanese experience with industrial policy was discussed. This chapter continues the review of industrial policy strategies by examining the economic development practices of State and local governments. State and local governments in the United States have a long history of attempting to use loan guarantees, interest subsidies, locational grants, tax concessions, regulatory policies, and other industrial policy instruments to encourage industrial growth in their regions. The diversity and variety of State and local development practices provides a rich, fertile ground for evaluating the effectiveness of the various proposed national industrial policy approaches and instruments.

The assessment of industrial policy programs and applications at the State and local level was the subject of a Joint Economic Committee hearing on July 14, 1983.[1] Specifically, the Committee was interested in determining to what extent (1) State and local governments have been successful in using their industrial policy instruments to leverage industrial development and (2) what the State and local experience implies about the desirability and feasibility of a tight-knit, or coordinated, industrial policy at the national level. The pros and cons of a federalist industrial policy that would rely on State and local governments to implement national industrial policy objectives was also considered.

The analysis of this chapter draws upon the experience of State and local governments and upon the general economic literature on State and local development practices. One of the major findings of this investigation was that State and local governments are currently in the process of shifting emphasis away from targeted industrial policies to a more general policy of supporting industrial innovation within their political jurisdictions. They are doing this by putting more emphasis on the fundamentals of economic growth: improved education and training programs geared to local labor markets, support for basic and applied research, support for recreational and cultural activities, improved local transportation, streamlined planning and development regulations, and improved university-business community linkages. By and large, today there is less emphasis on pirating industrial jobs from other States and regions, and much more emphasis on State and local policies to improve the overall economic climate.

Also, many States and their local jurisdictions began experimenting with new strategies to encourage growth through technological innovation. While the jury is yet out on how successful their strategies will be, it does seem clear that the industrial policy practices of State and local governments offer little positive encouragement to those who advocate industrial policy at the national level. Ironically, like the Japanese, State and local governments are moving away from industrial policy at a time when the backers of industrial policy in the United States are encouraging "full steam ahead" at the national level.

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[1] U.S. Congress, Joint Economic Committee, *Industrial Policy, Economic Growth and the Competitiveness of U.S. Industry*, Hearings before the Joint Economic Committee, 98th Cong., First Session, Part 2, July 14, 1984, pp. 103–150.

This chapter begins by examining the types of State and local industrial development practices and the types of policy instruments that are available. It then examines evidence which suggests that these targeted State and local strategies have been unsuccessful in stimulating State and local development. It also examines the experience of regional policy at the national level in the United States. After this discussion, the chapter concludes by examining the feasibility of a federalist industrial policy in lieu of a centralized national industrial policy.

One of the major conclusions of the chapter is that the rich, diverse experience of State and local industrial policy practices offers little support for the desirability and feasibility of a national industrial policy. The track record of targeted industrial policy practices at the subnational government level leaves little for the Federal Government to emulate. The chapter also concludes that while State and local governments have an important role in industrial development, any Federal Government attempt to direct these industrial activities in the name of a federalist industrial policy, or whatever, will be costly to implement and largely ineffective.

STATE AND LOCAL DEVELOPMENT PRACTICES

State and local governments offer a wide variety of development tools aimed at increasing industrial development. Robert M. Ady, Vice President of the Fantus Company, a Chicago-based plant location consulting firm, classifies the development tools into four categories: tax incentives, financing programs, training assistance, and special assistance programs.[2]

Tax incentives include full or partial exemption from taxes on inventories, raw materials, new equipment, and the corporate income tax. At the local level, a similar array of tax concessions, including property tax abatement, is often available.

Financing programs include the use of industrial revenue bonds, general obligation bonds, and loan guarantees for buildings, machinery, equipment, and plant expansions. These financial programs often represent a net interest savings to the expanding businesses. The Urban Institute estimated that State development agencies have authorized about $19.3 billion in industrial development bonds (IDB's) in 1981. For State development agencies, the IDB program represents the major bulk of their development efforts.[3]

Training assistance refers to the overall availability of State and local training facilities and programs to serve the needs of local labor markets and expanding businesses. Virtually all States have followed the pioneering efforts of South Carolina in providing "customized training" for industrial development. A unique feature of these programs is their cost effectiveness since trainees are unpaid and prospective employers have a major say in designing the training programs that they look to for new employees.

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[2] *Ibid.*, pp. 131-132.
[3] *Ibid.*, pp. 111-115.

Special programs include government efforts to provided low-cost industrial sites, research parks, streamlined development regulations to cut redtape, and an industrial infrastructure such as roads, bridges, university programs, etc.

The purpose of this discussion is to point out that State and local governments have been extremely creative and prolific in developing and refining many of the industrial policy instruments that industrial policy advocates want the Federal Government to apply on a selective basis at the national level. The State experience with industrial planning and development, using these tools, should provide a fair test of their likely effectiveness at the national level.

In the early 1950's and 1960's, many States in the lagging Southeast and Southwest regions adopted aggressive industrial development strategies. As the "Sunbelt" region gained in relative prosperity, States and communities in the "Frostbelt" region and in the West began to emulate the development practices of the South. As a result, by 1970 virtually all States, and many of their communities, had adopted an aggressive industrial policy with the twin aims of (1) pirating jobs from other States and regions and (2) protecting in-State jobs from being lured to other States and regions. A media blitz at the national level and the targeting of industrial firms in other States and regions was a common practice of regional chambers of commerce and State and local development agencies.

The rise of the Sunbelt economy resulted in a convergence of economic prosperity among the regions. Regional economic convergence has been a gradual process that began many decades ago, and is still occurring. Few regional economists and analysts would claim that State and local industrial policies have had much to do with the regional convergence in income and jobs. Most professional economists and analysts attribute the post-World War II pattern of regional growth and change in the United States to fundamental market forces, including low transportation costs, technological innovation, and a shift in the U.S. comparative advantage to high valued manufacturing (primarily in capital goods, chemicals, agricultural products, and military goods). In the wake of stiff foreign competition, many U.S. manufacturers were forced to expand their production facilities overseas or in the Southeast and Southwest to take advantage of low labor costs.

The view that fundamental economic forces, and not State incentives, are the driving force behind the emerging regional growth patterns in the United States is supported by experience and the numerous studies of plant locational determinants. For traditional manufacturing plants, the important locational factors continue to be access to markets, access to raw matterials (including the availability of fuel and electricity), transportation, and the availability of a large pool of low cost labor.[4] Thus, according to this view, growing markets, the cost of labor, and technological innovation are behind the emergence of the Sunbelt economy.

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[4] Michael Kieschnick, *Taxes and Growth* (Washington, D.C.: Studies in Development Policy, Council of State Planning Agencies, 1981), pp. 35–63.

For high-tech companies, market forces are also the primary determinant of regional growth. But, in the case of high-tech companies, the cost and availability of skilled labor and the overall tax climate take on added significance. Other locational requirements of high-tech companies include such regional and community characteristics as local transportation, good schools, a quality university environment, recreational and cultural opportunities, and ample space for expansion.[5]

In general, there is no empirical evidence that States (or communities) can pirate manufacturing and high-tech jobs from other regions by simply offering generous financial inducements.

Robert Ady explained the lack of correlation between State financial and other industrial development incentives and plant location decisions this way:

> Quite bluntly, the typical plant location scenario suggests that existing State, local, and indeed federal programs do not stimulate facility location. The market place and product demand continue to be, as they always have been, the driving force. Companies do not expand to take advantage of State or local economic development programs but rather to meet present or projected future demand. Once the need has been identified, however, such programs may have some influence on where a facility will locate.[6]

One of the major reasons for the ineffectiveness of targeted State and local industrial policies is that they are offered, in one form or another, by practically all of the States so that their effects are nullified. In the early 1960's and late 1970's, States began to realize that interjurisdictional competition had created for them a competitive zero-sum society. In response, they began to reorient their development strategies inward. Probably the barrage of university studies extolling the virtues of State internal development strategies helped to reorient thinking about the inappropriateness of pirating and targeting strategies. Also, the pioneering work of David Birch of MIT on the job generating process revealed that most job expansion comes from start-ups and from small companies already within the State and not from relocating companies.[7]

All of these factors combine to contribute to the painful reappraisal of State and local development practices from which emerged a new emphasis on State and local government policies to encourage entrepreneurship, technological innovation, and the expansion of existing businesses. *The overall economic climate of the State or region became the central focus of State and local develop-*

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[5] U.S. Congress, Joint Economic Committee, *Location of High Technology Firms and Regional Economic Development,* a Joint Economic Committee Print, A Staff Study prepared by Robert Premus for the use of the Subcommittee on Monetary and Fiscal Policy (Washington, D.C.: Government Printing Office, June 1, 1982).

[6] U.S. Congress, Joint Economic Committee, *Industrial Policy, Economic Growth and the Competitiveness of U.S. Industry,* Hearings before the Joint Economic Committee, 98th Cong., First Session, Part 2, July 14, 1983, p. 134.

[7] David L. Birch, "Generating New Jobs: Are Government Incentives Effective?" *Commentary,* July 1979, pp. 3–6.

ment programs, although interjurisdictional competition to offset the pirating practices that are latent in any decentralized political structure is still keen.

Carol Steinback entitled attention to the shift in the focus of State development policies in a 1979 article entitled "Economic Development of the States: There's a New Look Coming." The following excerpts taken from the article are germane to the argument that State and local policies aimed at specific firms and industries are giving way to a more general approach aimed at improving the overall economic climate:

> Fresh thinking and practice are challenging the traditional view of economic development as "smokestack chasing" and dining with foreign entrepreneurs. The emerging focus may be on other, once-neglected areas—promoting small business, nurturing new enterprises, and supporting existing State industries. Behind the shift is an important premise: economic development is for everyone, not for industry alone.
>
> No one can deny that there are benefits for a State in capturing industries that operate elsewhere or might open branch plants in a new area. . . . A strong argument has been made, however, that this approach involves excessive costs, leads to abuses, generates fierce and counterproductive rivalries among States and regions—and, most serious of all, simply misses the mark of where the greatest potential lies for increased employment and economic growth in the United States today.[8]

In discussing what a successful State development strategy ought to look like, Roger J. Vaughan had this to say:

> An economic development strategy must focus on the overall economic climate, and not waste resources on special incentives for new favored firms. It must encompass a broad range of policies including training programs, infrastructure development, and capital mobility as well as a balanced tax structure.

Continuing, Vaughan explains the logic of targeting the overall economic environment at the local level this way:

> A major advantage of developing local infrastructure rather than offering specific tax incentives, is that many firms can benefit from better roads, sewers, water supply, and fire and police protection. These benefits need not be limited to a few large firms. The State, with its superior resources, can step in and help local communities with their development problems.[9]

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[8] Carol Steinback, "Economic Development in the States. There's a New Look Coming." *State Legislatures,* National Conference of State Legislatures, March 1979, pp. 6-7.

[9] Roger J. Vaughan, *State Taxation and Economic Development* (Washington, D.C.: Council of State Planning Agencies, 1979), p. 109.

U.S. EXPERIENCE WITH REGIONAL POLICY

We now turn our attention to the U.S. experience with regional policies aimed at reviving distressed regions and communities. An examination of past experiences with Federal Government attempts to alter the course of regional growth and development is particularly pertinent to the industrial policy debate. Most of the Democratic industrial policy plans, as discussed in Chapter III, include Federal aid to distressed communities and regions as part of their grand targeting schemes, but these regional programs have received little attention in the industrial policy debate.

In a market economy, competitive markets allocate resources efficiently among competing investments. The spatial analogue of this efficient capital market theory is that, since investments must occur in place, the market process also allocates investments efficiently among the regions and States. The major challenge confronting industrial policy advocates is to demonstrate that the Federal Government can outperform the market in picking winners and losers among industries *and* among the Nation's regions and communities. The experience of the Federal Government in guiding regional development and aiding distressed regions and communities should provide a useful background in discussing the feasibility of the proposed industrial policy initiatives.

Four Federal Government programs to intervene in regional economic development are discussed in this section. While not all inclusive, these programs represent the major problems with Federal regional policy as it has been practiced in the United States since the 1950's. A common feature of the program is that they represent Federal aid to communities and regions in an attempt to (1) alleviate community and regional distress and (2) alter emerging regional growth patterns in a predetermined way.

FHA and VA Mortgage Loan Guarantee Programs.—The FHA and VA Mortgage Loan Guarantee Programs were aimed at bringing subsidized housing to the poor in the Nation's central cities. The programs resulted, instead, in providing subsidized housing for the more affluent in the suburbs of the Nation's cities. Rather than improve the quality of the city life, which was their primary targeting focus, they hastened the flow of the relatively more affluent citizens to the suburbs.

Representative James H. Scheuer (D-N.Y.), in a question and answer session during the Joint Economic Committee hearing, explained his disillusionment with the ability of government, at any level, to revive declining urban neighborhoods, by recalling his experience with FHA programs:

> I had some experience with the FHA programs before I came to Congress; specifically, the section 220 FHA programs that were designed to clear slums and were the riskier programs for private enterprise because they were building new capital, new housing, in the rundown parts of town, crime-ridden parts of town, where it was sometimes tough to get people to move into, no matter how attractive the housing was.

> Now Congress recognized that this was a risky business and they mandated that the FHA had to give 90 percent loans based on replacement cost, not on value.
>
> My big problem with them (FHA) was that by the time I finally got them to issue a mortgage, 18 months or two years had passed. By that time, construction costs had gone up by 1 percent a month and so now they were 18, 20, 24, or 25 percent greater, and I had to start the whole process over again.
>
> In other words, there was a great disinclination for this agency, and I'm not leaving the finger of blame on it—I'm just trying to say that government bureaucrats, by nature, are government bureaucrats and they are not being paid to take risks, and if a guy's within a year or two of retirement, what he wants to do is stay out of trouble and not sign anything that could embarrass him, and they don't take risks. The simply do not take risks.
>
> This was true even in a program passed by Congress that mandated them to have the FHA take the risk and gave them a very clear and simple standard of what they should deliver the loan based on—construction costs. They still found ways to evade it, and evade it, and evade it for months, and years on end.[10]

Public Works and Economic Development Act of 1965.—Since its inception in 1965, the Economic Development Administration provides another example of failed Federal regional policies. The EDA was originally established to target Federal aid to the Nation's deeply distressed and lagging regions. The popularity of the EDA public works programs spread rapidly. By 1973, over 1,729 incorporated regions qualified as distressed regions. By the late 1970's, approximately 80 percent of the Nation was classified as distressed according to EDA criteria. Rather than a targeted strategy, the EDA program rapidly evolved into a shotgun approach to regional policy.[11]

New Towns Policy.—The Department of Housing and Urban Development's "new towns policy" is another example of failed targeted Federal regional policy. The aim of this policy was to build "new towns" in rural regions in order to stem the migration of the rural population to the Nation's major urban centers. The new towns were viewed as "way stations" that would provide an alternative location to rural migrants who would otherwise head toward the urban centers. Not only did this policy fail to stem the growth of large urban centers, the new towns policy was adjusted to flow with the tide. New towns "intown" and new towns in suburban areas of large metropolitan regions became in vogue. Whether or not they served as magnets to keep people away from urban centers, new towns ultimately become a part of the urban magnet that drew people to these centers.

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[10] U.S. Congress, Joint Economic Committee, *Industrial Policy, Growth and the Competitiveness of U.S. Industry*, Hearings before the Joint Economic Committee, 98th Cong., First Session, Part 2, July 14, 1983, p. 142.

[11] Edgar M. Hoover, *An Introduction to Regional Economics* (New York, N.Y.: Alfred A. Knopf, 1975), pp. 286–292.

Not related to the problem of spatial policy, but nonetheless equally important, the social goals of the new towns policy also ended upon the wayside. Federal subsidies to the development of new towns became primarily a Federal subsidy to middle and upper income classes denying the Nation's planners and heterogeneous communities with diverse income and racial groups that they so desired.[12]

Urban Renewal.—Urban renewal, a Federal program aimed at stemming the decline of our cities, is another case-in-point of the Federal Government's inability to reverse long-term structural changes within the Nation's economy. Originally designed to improve housing of the poor in inner city neighborhoods, the program was quickly broadened to include economic revitalization, slum clearance, and other objectives. Before the program was abandoned in the 1970's as the major thrust of national urban policy, urban renewal destroyed 200,000 more houses than it created, while central city neighborhoods continued to decline.[13]

In general, the failure of these four Federal programs to revive distressed communities and provide housing and jobs for the poor can be attributed to a number of factors, including deficiencies in the design and dilution of the objectives of the programs. Regardless of the cause, the lesson for a national industrial policy with a regional dimension is quite clear: Federal interventions are likely to do little to offset, or reverse, shifts in economic activities among regions. Nor are they likely to be successful in alleviating the distress that accompanies such change. If the past history of Federal regional interventions is to serve as a guide, a national industrial policy targeted to distresssed communities and regions is likely to become diffused over time, and "drag out" the necessary adjustments to economic change without any meaningful benefits accruing to the intended beneficiaries.

ADJUSTMENT ASSISTANCE

This does not say that States and communities, together with existing Federal resources, cannot do much to facilitate the adjustment process. At issue over the Federal role in the adjustment process is whether communities, their governments, or organized interest groups ought to be the focus of adjustment assistance, or whether the focus ought to be on those individuals adversely affected by economic change and who are unable to cope on their own resources. Also, at issue is which level of government can best handle programs to facilitate the regional adjustment process.

The industrial policy plans discussed in Chapter III place considerable emphasis on Federal aid to distressed communities, political jurisdictions and organized interest groups as part of their grand targeting scheme. The major problem with this approach is with the inefficiencies and inequities that it would create. Presumably, Federal aid would flow to local governments or organized groups to be used to aid individuals who are in distress. Unfortunately, the administrative overhead would effectively reduce the flow of resources to individuals in distress. Moreover, the inequity of Federal aid designed to provide "place utility," in the name of aiding distressed individuals, is that high income individuals and groups would gain from Federal programs to enhance local economic growth in the name of helping the poor.

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[12] Harry W. Richardson, *Urban Economics* (The Dryden Press, 1978), pp. 105–114.
[13] *Ibid.*, pp. 114–127.

An important inefficiency is that Federal programs attempting to reverse or forestall the natural decline of a region that loses its major economic purpose will keep that region's economic resources from flowing to higher productivity uses. The geographic mobility of capital and labor resources has always been a major engine for economic growth and prosperity in America. Continued unfettered free mobility of these resources should continue to be a prime factor in the adjustment and adaptation of the American economy to new world economic trends. Maintaining freedom to adapt and adjust internally at the regional level is an important component of the ongoing revitalization of the American economy. Federal aid to distressed communities to halt this process in the name of a national industrial policy would only divert resources from their most productive and efficent use.

Consistent with the New Federalism philosophy that has emerged in recent years, State and local governments ought to have an important role to play in carrying out Federal aid to individuals. For example, under the Job Training Partnership Act, States and communities have a major responsibility for identifying individuals in need of training and in designing training programs to help those individuals acquire the skills they need. The important point is that most of the Federal aid under the Job Training Partnership Act is targeted to individuals. States, and their local and regional organizations, are the media for carrying out Federal policy. Under an ideal program, Federal funds would flow in larger quantities to those regions that are experiencing severe labor market problems, not because they are targeted, but because a greater proportion of individuals within these regions qualify for the Federal assistance that is available.

The current Federal Supplemental Compensation Program illustrates the difficult political reality of trying to aid needy individuals by extending Federal aid to the State. As originally designed, the Federal supplemental unemployment insurance program was designed to extend benefits to unemployed workers in those States with high unemployment rates. However, over time, the eligibility rules were changed so that, today, all States qualify for supplemental benefits regardless of their unemployment rate.[14] A program of supplemental aid to qualified, unemployed individuals regardless of their geographic location could be a *de facto* method of aiding distressed areas and communities.

FEDERALIST INDUSTRIAL POLICY

The sharing of responsibility among levels of government in our Federal system raises the possibility that State and local governments can serve as instruments of the Federal Government in implementing broader national industrial policy objectives. There would be several advantages to this decentralized approach. First, the approach would be flexible and allow each State to adopt an industrial strategy consistent with its needs. Second, States already have economic development programs in place so administrative duplication and overlap would be lessened. Finally, a national industrial policy implemented at the State and local level could be integrated into on-going State and local programs.

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[14] Council of Economic Advisers, *Economic Report of the President* (Washington, D.C.: Government Printing Office, 1984), pp. 92–94.

The difficulty with this approach is how to get a coordinated, consistent strategy among the States to meet national objectives. A program to promote the computer and electronics industries and to phase out steel and autos, for example, would certainly affect the regions differently. In general, any national program to phase in some industries and phase out others is bound to have differential regional impacts. The major question is how trade-offs are going to be reconciled so that all of the States and regions cooperate in a consistent and coordinated manner.

A second difficulty concerns the ability of States to effectively carry out a comprehensive industrial strategy handed down to them by the Federal Government. According to Robert Ady:

> If the Federal Government institutes an industrial policy, it would be exceedingly difficult to integrate it into existing State development programs. First, with few exceptions, States lack any cohesive game plan or long-term economic growth strategy. Most programs are reactive rather than proactive. Many programs are added to nullify programs instituted by other States. Other programs are added to meet a specific company or industry need.
>
> Next, States do not have the infrastructure and resources in place to implement an industrial policy. Congress would have to build an organization and provide the necessary funding from scratch in each of the fifty States. Further a unified policy would be most difficult to administer and implement in concert with State governments in a timely fashion.[15]

Finally, a national industrial policy carried out at the State level is inconsistent with the goals of a Federal system. A Federal system is based upon respect for differences in opinions among States, regions and groups. A national industrial policy handed down to the State and local governments would necessarily suppress individual and regional differences. If these differences are not real and important, there would be no real basis for having a Federal structure in the first place.

One of the proponents of a Federalist industrial policy is the Urban Institute.[16] Their brand of a Federalist industrial policy would focus on methods to overcome what they perceive to be a major deficiency in the capital markets: a lack of sufficient funds for small, risky investments. The current Federal industrial development bond (IDB) program is one way the States attempt, in principle, to overcome the "capital gap" problem. But, in their review of State-administered IDB programs, Larry C. Ledebur of the Urban Institute and Professor David W. Rasmussen, of the University of Florida, have concluded that States do not target these funds and that IDB's are an inefficient Federal subsidy because lost Federal revenue exceeds the size of the actual subsidy to firms using IDB's.

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[15] U.S. Congress, Joint Economic Committee, *Industrial Policy, Economic Growth and the Competitiveness of U.S. Industry,* Hearings before the Joint Economic Committee, 98th Cong., First Session, Part 2, July 14, 1984, p. 135.

[16] *Ibid.,* pp. 121-125.

To overcome both problems, Ledebur and Rasmussen would eliminate the Federal IDB program and substitute in its place Federal financial support to capitalize State "revolving" loan funds and loan guarantee programs. As a condition for accepting Federal support, States would have to agree not to practice job pirating and to restrict their industrial loans and loan guarantees to small innovative companies in manufacturing. Firms in the services, finance, research, agriculture, and other sectors would be excluded from eligibility.

While the Ledebur-Rasmussen version of a Federalist industrial policy is consistent with the New Federalism goal of strengthening the role of State government within the Federal system, it raises a number of important questions. First, while certain aspects of the Ledebur-Rasmussen plan are laudable, their case for direct Federal involvement in the State loan and loan guarantees programs is not clear. Federal programs to improve the overall availability of loanable funds to the economy (through increased savings) would be a far more efficient approach to reducing any capital market gap that may exist. As Stated in Chapter II, if the Federal Government reallocates funds in the capital market, the result will probably be lower productivity and less economic growth.

Second, if Federal involvement is desirable, a preferable mechanism may be through State and local block grant programs. The States and communities could determine what portion of these funds they wish to devote to economic development. They would also be able to choose their investment strategy without Federal Government interference.

Third, a new Federal agency to police State lending practices and other development activities would be necessary. This policing task may not be as easy as it may seem at first glance. States have a myriad of ways of diverting funds through revolving loan accounts. The direct inflow of Federal funds to support direct loan and loan guarantee programs may simply result in a diversion of State funds from those programs to other development activities the Federal Government may or may not approve. In any case, trying to differentiate between business expansions that would occur without a subsidy and those that occurred because of the subsidy may be an insurmountable task.

Finally, Ledebur and Rasmussen may overState their case for Federal involvement in the financing of State economic development programs. Ledebur and Rasmussen believe that State and local governments *systematically underinvest* in growth enhancing activities because the benefits of these activities partly subsidize the Federal treasury and residents in other States and regions. This is a classical externalities argument, and in that sense it is valid, but what Ledebur and Rasmussen fail to realize is that States and communities are engaged in intense competition and that these competitive pressures place upward pressure on State and local spending on growth-enhancing activities. The central point of this discussion is that the issue of whether State and local governments underspend or overspend on economic development cannot be resolved by appealing to economy theory.

However, the empirical evidence that Ledebur and Rasmussen present to bolster their case for a Federalist industrial policy is not convincing either. Specifically, they point to differentially higher average rates of return in the venture capital industry as evidence that the capital markets systematically underinvest in small, innovative companies. It is this perceived "capital gap" problem that they see a Federalist industrial policy as correcting. However, the existence of a "capital gap" cannot be proven by observing differentials in average rates of return among different classes of investment, as Ledebur and Rasmussen seem to think. Efficient capital markets equalize *ex ante* marginal rates of return among investments (adjusted for risk), not *ex post* average rates of return. Without the appropriate data on marginal rates of return among investment categories, Ledebur and Ramussen are misrepresenting their case for a Federalist industrial policy, no matter how desirable it may be for other reasons.

SUMMARY AND CONCLUSION

Many empirical studies have confirmed that financial subsidies and selective tax concessions have very little, if any, influence on the location and expansion decisions of most companies. Moreover, the regional strategies of the Federal Government provide little evidence of having any significant, long-lasting influence on altering the emerging regional development patterns.

These empirical findings are important to the national industrial policy debate because industrial policy advocates are considering the use of similar development approaches at the national level to influence national industrial patterns. From the evidence cited in this chapter, however, there is no basis for believing that these financial inducements and special favors will amount to any more than an inequitable industry subsidy with little or no change in industrial behavior. The primary factors that will drive industrial growth in the future are market and cost considerations, such as growth in domestic GNP, foreign markets, labor costs, general tax policy, and technological innovation. The plain fact is that the State and local government experience with industrial targeting and the Federal regional policy experience in the United States offer little encouragement to industrial development planners at the national level.

In conclusion, rather than Federal aid to distressed communities and regions in the name of industrial policy, Federal assistance to individuals unable to cope with economic change would be more desirable. The assistance could be funneled through special State programs under the Job Training Partnership Act and through federally funded State and community block grant programs. To be most effective, these programs ought to emphasize worker training and retraining, job search skills, counseling, and labor market exchanges. Medical and other services may also be desirable. In any case, targeting individuals adversely affected by economic change, not firms, industries, and communities, should be given much higher priority in these times of rapid economic change.

VII. POLICY ALTERNATIVES

Clearly, a centralized, tight-knit industrial policy is not for the United States. This is the conclusion of this Report after examining the testimony of witnesses before the Joint Economic Committee and the voluminous literature on the industrial policy issue.

The major findings of this review of industrial policy are as follows:

> The United States does not need an industrial policy since U.S. firms are quite competitive in world markets.
>
> Industrial policy will not work in America because of our political and cultural environment. In fact, it would be counterproductive in our society.
>
> The key to economic revitalization in America rests with sound macroeconomic policies aimed at promoting saving, investment, and technological change.
>
> The best strategy is one that targets the "entrepreneurial process," rather than one that attempts to move resources away from industries or regions according to some predetermined government plan. The market remains the best mechanism for "picking winners and losers" in our society.
>
> Our economy is not doing a bad job in advancing the cause of industrial development and raising U.S. living standards. All it needs is a little bolstering and augmenting here and there. It does not need central government planning.

Since industrial policy shows no promise for answering the challenges of today's world economy, attention must be turned to an appropriate policy package to promote U.S. competitiveness abroad and rising living standards here at home. First, we need policies to promote *general* economic health. In particular, we must constantly focus on the goals of economic growth, rising employment, and low inflation. As the economic pie grows, so do the various segments of that pie. Only sound macroeconomic policy can provide the necessary environment for a pro-growth, competitive society. An appropriate policy to achieve long-term economic growth would shun short-term fine-tuning and emphasize stable monetary and fiscal management. We believe that steady monetary and fiscal management is the best way to achieve a stable economic environment conducive to long-term investment and saving decisions.

Second, facing up to international competition must be another important component of any program to enhance U.S. competitiveness. The American economy can only be strong if American businesses use state of the art technology and offer quality products and services. The discipline of international competition is necessary to see that this happens and that resources are allocated to these "best and highest uses."

Third, we need improved productivity performance. This calls for targeting the "entrepreneurial process," as Congressman Ed

Zschau calls it. We need a consensus on proposals that will promote productivity growth, for it is the foundation for a more competitive society. Along with labor force growth, productivity—output per worker per hour—is what gives rise to economic growth. Productivity growth can also help reduce inflation by reducing relative unit labor costs and by putting more goods on the shelves. Also, productivity growth can increase real wages. Finally, productivity growth is fundamental to economic growth and long-run U.S. industrial competitiveness.

What specific policies do we need to pursue in order to improve performance? Of course, sound macroeconomic policy is essential to increasing productivity or any other economic measure. Assuming macro policies are in good order, what are the factors that enter into productivity performance? The following are basic:

Increased and improved capital equipment available to each worker (including adequate public infrastructure—roads, water systems, etc.).

Improved incentives to encourage saving.

Increased research and development spending and technological progress.

Reduced government regulation.

Improved labor quality and increased education and skill of the workforce.

Improved entrepreneurial and management skills.

Labor-management cooperation.

Improved product quality.

Enhanced labor market and capital market mobility.

Access to quality land and abundant natural resources.

Undoubtedly there are other factors, but the foregoing are considered to be important in most studies of productivity growth. Conspicuously absent from the list is industrial policy. No serious studies of economic growth list the Nation's industrial mix as an impediment to productivity growth.

Any of the above determinants of productivity growth could be the subject of an extensive study, and most of them have been studied extensively. Only the first five are selected for detailed discussion in this Report. In our view, these five are the most important factors. Equally important, they are the factors over which the Federal Government can have some control.

THE ROLE OF CAPITAL FORMATION

If human capital is the driver, investment in physical capital is the vehicle leading to productivity growth. The logic of this proposition is impeccable. If there are two equally skilled workers, and one is equipped with a hand saw and the other with a power saw, who is going to produce the most lumber? Whose productivity will be the highest?

Capital formation and labor productivity fit together like hand and glove. In the 1950's and 1960's, the U.S. capital-labor ratio grew at an annual rate of about 3 percent. In the 1970's, it grew about 1¼ percent a year, actually declining in the latter part of the decade. (If capital required to meet government-imposed pollution abatement regulations is deducted, the capital-labor ratio growth is even less.)

And what happened to productivity growth during this same period? Output per worker per hour in the private sector grew 3 percent in the 1950's and 1960's and at half that rate—1.5 percent—in the 1970's, actually declining in 1979, and also in 1980 and 1982.

The slow growth of the capital-labor ratio in the 1970's is at the root of our recent reduced rates of productivity performance.

What can the Federal Government do about it? It can pursue tax and regulatory policies that encourage investment and promote personal and business saving to finance such investment. Only if the Nation is willing to incur current "sacrifices" in consumption and government services can the necessary resources be found to increase the rate of capital formation.

Regarding public infrastructure, Federal, State, and local governments have a direct responsibility to upgrade the country's rapidly deteriorating bridges, highways, parks, sewers, railroads, water systems, ports, and public buildings. This is important to long-lasting economic development as businesses take advantage of improved facilities.

These public assets, just like consumer or producer durable goods, wear out and break down if not cared for. While we must stimulate investment in the private sector to strengthen the economy, we must also make a commitment to rebuild and repair that public infrastructure which supports private sector economic growth. There are several budget restraints, but careful preplanning and study can result in efficient investment in these public facilities. Economic efficiencies, not politics or make-work programs, should be given primary consideration.

THE IMPORTANCE OF SAVING

The seed capital for new investment spending is the rate of saving. Unfortunately, in our consumption-oriented society, the pool of savings has almost dried up. The average ratio of personal saving to personal disposable income in the United States was only 7 percent in the 1970's, and 6 percent thus far in the 1980's.

A look at history and what our industrial competitors are doing should convince us once and for all that those countries which have the highest saving rates also have the highest investment rates, the highest productivity growth, and the highest economic growth rates.

The U.S.-Japan comparison is the most striking. Over the 10-year period 1973 to 1982, U.S. personal savings as a percent of personal disposable income averaged 6.9 percent per year and gross saving (consumers, business, and government) as a percent of gross domestic product, averaged 18.9 percent. On the other hand, in Japan these ratios were 21.0 percent and 33.2 percent, respectively.

Fixed capital investment (excluding housing) averaged 13.6 percent of gross domestic product in the United States but nearly double that amount, 25.6 percent, in Japan over the decade 1973 to 1982. The low U.S. saving and investment rates, compared to Japan, have resulted in a productivity rate of 0.2 percent in the

United States over the decade 1973 to 1982, measured by gross domestic product per employed person. This same productivity measure in Japan over the same 10-year period was 3.0 percent, the highest of the major industrial nations. In manufacturing, the productivity growth rates in both countries are much higher, but Japan still maintains its preeminence. Obviously, if these trends continue, it won't be too long before Japan will exceed the U.S. in total productivity and total per capita real income. The public policy implications are unmistakeably clear; we must go back to *fundamentals* and aggressively increase U.S. levels of saving and investment if we hope to increase productivity and U.S. living standards.

The economic program of the Reagan Administration has already gone a long way toward providing the needed economic policy base for meeting these goals. Regarding savings, the new investment retirement accounts, the reduction in tax rates on capital gains, a liberalization of depreciation allowances, a reduction in eState and inheritance taxes, and an across-the-board reduction in personal income taxes are important revisions of the tax system that should encourage saving and investment.

As the economic recovery progresses and as capacity utilization rates continue to rise from their depressed recession levels, the incentives to save and invest in new plant and equipment will become even stronger. While relatively high interest rates are a problem, profits are good and business cash flows are enabling business to do a great deal of expansion by internal financing.

RESEARCH AND DEVELOPMENT

If investment in physical capital is the vehicle, research and development is the engine of technological progress and productivity. A recent study by the National Bureau of Economic Research shows a positive connection between the rate of R&D expenditures and the rate of productivity increase in various industries. In addition, there are important "spillover" effects because one industry's R&D frequently results in improved inputs in other industries.

Data on the long-run trend of U.S. R&D outlays are not good. Total R&D spending reached a peak of 3 percent of GNP in 1965 and has trended irregularly down to 2.4 percent today. The Federal Government should concentrate its efforts on *basic* research, leaving applied research and development to industry. But the alarming trend from the standpoint of Federal policy is that in the mid-sixties, the Federal Government supported half of the Nation's R&D effort; whereas, today it supports only one-third. Moreover, in recent years, the mix has changed in favor of national defense R&D, as opposed to industry-oriented R&D. Of course, there are spinoff benefits from military research and development, but the underemphasis on commercial R&D needs to be redressed. For example, increased funding for scientific and sophisticated technical instrumentation should be made available for badly needed renovation of university research facilities.

Regarding Federal tax policy affecting research and development, the tax incentives in the 1981 Economic Recovery Tax Act were helpful. They provided for a 25 percent tax credit on increases in research and development expenditures, including both inhouse R&D and 65 percent of all payments to universities and other research institutions to perform qualified basic research. There needs to be further improvement in these provisions. For one thing, the incremental R&D tax credit, which is due to expire in 1986, needs to be made permanent. There is a proposal to do so in the tax section of the 1984 Senate deficit reduction legislation. A temporary tax credit cannot provide the kind of incentive needed for long-term projects. In addition, Senator Bentsen and Senator Danforth have introduced legislation to make other improvements in the R&D provisions:

1. Eliminate the rolling base restriction and base the measurement of R&D increases eligible for the credit on the 1981 to 1983 average expenditures.
2. Permit tax deductions for contributions of equipment for teaching science in universities, colleges, and vocational institutions. (There is already a provision for equipment donated for scientific research.)
3. Permit tax credits for corporate financing of vocational education science teachers.

These three provisions are in the tax section of the 1984 Senate deficit reduction legislation.

Senator Bentsen's and Senator Danforth's proposals are deserving of serious consideration because of their potential to strengthen investments and the R&D business community.

Antitrust Laws and R&D.—There is an aspect of research and development that has particular relevance to the international competitiveness of U.S. firms. Antitrust policy can increase the risk and cost of R&D to such an extent that U.S. companies are placed at a competitive disadvantage with foreign firms. This is because if companies that are otherwise competitors cooperate in the R&D area, they can be challenged under the Federal Antitrust laws.

There is no question that joint ventures can minimize costs, diffuse technological innovations, and achieve economies of scale in research. The main concern here is with R&D on the technological frontiers. The further we push the limits of our technological knowledge, and our technologies, the costlier and riskier those R&D efforts become.

In the ailing smokestack industries, too, the application of new technology and new approaches can rejuvenate these firms. But they may not be able to do it acting alone. There is a strong need to pool resources in R&D joint ventures. Combining the complementary strengths of different firms to bear on R&D objectives will reduce risks and avoid costly duplication.

Moreover, with a growing scarcity of trained people in the United States we need to avoid duplication of effort and get the most out of our available technical talent.

Clearly, R&D joint ventures are going to be needed. The trouble is, U.S. companies are reluctant to pursue them. The exact State of the antitrust law regarding such entities is unclear, and the risks of possible antitrust suits are too great.

Currently, the formation of R&D joint ventures is not treated as *per se* violations of the antitrust laws, even if some lessening of competition in research occurs. But any time businesses join together in this way, collateral agreements might be made that could be *per se violations* of the law.

Apart from these *per se* violations, the rule of reason is applied. Unfortunately, the legal and economic criteria necessary for evaluating the practice of joint R&D ventures in light of the rule of reason appears to be lacking. Proposed legislation would clarify the criteria to be applied by the courts.

This uncertain legal climate was one factor that prompted the Department of Justice to issue, in November 1980, its "Antitrust Guide Concerning Research Joint Ventures." This guide, although helpful, does not resolve all the ambiguities in the law. Excessive uncertainty still has a chilling effect on the formation of some joint ventures, especially when ventures involve large firms. In conducting applied research, the legal threat becomes potentially serious and the possibility of treble damages compounds this threat. There are just too many gray areas in the law.

By perpetuating this uncertainty, the antitrust laws may hinder the ability of U.S. firms to compete in the world markets on the same footing as their foreign rivals, where research consortiums are not only permitted, they are encouraged. U.S. companies have enough problems coping with the practices of foreign governments without having to worry about our own government.

Accordingly, we believe amending our antitrust laws to encourage R&D joint ventures would be an important step in assuring U.S. technological leadership in the world.

REDUCED GOVERNMENT REGULATION

Government regulation, though desirable and beneficial in many cases, imposes heavy costs on society.

In the past two decades, there has been an explosion of regulations, particularly social regulations. The Federal Register, where all new regulations are printed, provides the evidence. In the mid-1950's, some 10,000 pages were published in the Federal Register each year. By 1970, 15 years later, that number had doubled. By 1980, the number of pages added was 74,000. Today, the Federal Register is growing more slowly now that curbs have been put on the regulatory process by the Reagan Administration. The pages added in 1983 were 53,000.

Many government regulations, particularly those affecting health, safety and the environment, have contributed significantly to the over-all well-being of American consumers and workers. We would not turn back the clock, because many regulations have produced substantial benefits.

However, the heavy costs and burdens on business (and ultimately on the consumer) have been almost ignored in setting regulatory policy. Regulation appears to have been pursued with "tunnel vision," looking only at the benefits without concern for costs. It is time we took a hard look at the cost side of the equation; both the dollar costs and the time and burden costs.

The direct compliance costs of regulation have been estimated by Dr. Murray Weidenbaum at about $100 billion in a study prepared for the Joint Economic Committee. Regulation aggravates our inflation problem by putting pressure on prices throughout the whole economy. The $100 billion in compliance costs is passed on to consumers just as surely as business taxes are passed on to consumers.

In addition, there are significant indirect or secondary costs, such as uncertainties in the investment decision process, which discourage capital investment and retard economic growth.

Regulation causes losses in productivity, which Edward Denison of Brookings Institution estimates at about one-fourth of the potential annual increase in productivity.

The recent proliferation of regulations and the lack of coordination among regulatory agencies have often resulted in regulations which are duplicative, conflicting, excessive, or poorly conceived or executed. Witnesses appearing before the Joint Economic Committee have provided examples where compliance with one regulation requires violation of another. This not only puts business in unnecessary legal and financial jeopardy, it also reduces respect for the law and the Federal Government. Small businessmen often are hit hardest by the morass of conflicting and duplicative regulation because they cannot afford the necessary legal advice, and indeed excessive regulation has caused the demise of many small businesses.

Truly, the regulatory morass is a problem with which we must deal.

The Reagan Administration has devoted considerable attention to this problem, building on some work initiated by the Carter Administration. One of President Reagan's early actions was to establish a Task Force on Regulatory Reform, headed by Vice President Bush. At the same time, he issued Executive Order 12291, establishing the first systematic process for managing federal regulation.

Under Executive Order 12291, Executive agencies are required to assess the likely economic effects of all proposed and final regulations, and all regulations must be reviewed by the Office of Management and Budget before they are issued. Major rules—those with a likely economic impact of $100 million or more—must be supported by formal Regulatory Impact Analyses. These procedures have helped to consolidate the previously fragmented process of regulatory policy-making—in which major health, safety, and economic policies were developed through thousands of decisions and compromises, often with little coordination among agencies or integration with economic policies of the Administration.

Besides improving the coordination of regulatory decisions, Executive Order 12291 established a firm and coherent set of regulatory policies. The Order directed that regulatory action is not to be undertaken unless the potential benefits to society outweigh the potential costs to society. Agencies are to set regulatory priorities with the aim of maximizing the aggregate net benefits to society. In pursuing regulatory alternatives, the alternative involving the least net cost to society is to be chosen.

The problems differ with regard to economic regulation and social regulation. Until the mid-1960's government regulation was aimed primarily at achieving strictly economic objectives, such as control over monopoly or stabilization of an industry, and did so through intervention in the marketplace in the form of controls over prices, entry requirements, or other aspects of economic activity.

Over the past five years, Congress has passed bipartisan legislation to deregulate air and surface transportation, energy, financial services, and telecommunications. These industries are still in transition; consequently, the ultimate effects of this wave of economic deregulation is unclear. The proper course right now is for government to step back and review and evaluate what has ocurred to date before making major moves at further economic deregulation.

With regard to social regulation, we must continue to improve cost-benefit analyses and monitor techniques of the regulatory agencies. Contradictory, duplicative, and unsuccessful regulations must be eliminated. Regulatory policy must achieve the desired benefits at minimal cost to society. This is the course that will help to increase productivity and foster economic growth, while achieving the desirable aims of regulation.

EDUCATION AND TRAINING

The human element in productivity growth is obviously important, and part and parcel of the human element is the education and training of the workforce. It is a matter of fact and logic that an educated and trained workforce is more productive than a workforce that is ill-educated and ill-trained.

General Education.—There is a growing sense of crisis about education in the United States. In 1983, at least 15 major education studies concluded that America is a "nation at risk." There has been a rising tide of mediocrity in the last two decades with regard to educational attainment.

Based on 1980 Census data, the number of functionally illiterate Americans is estimated at about 30 million.[1] For many of those who have an education, basic skills and competence in science and mathematics required for developing lifelong employability and trainability are lacking. This is in contrast to rising workforce skills among our major world competitors.

There has been an erosion of standards in our schools. Curricula have been softened, testing and academic requirements have been reduced, vocational programs have slighted basic skills, and teachers have encountered declining real pay, reduced parental and community support and a deteriorating working environment. As a result, there is a critical, growing shortage of qualified teachers, particuarly in mathematics and science.

Most businesses, until recently, have shunned support of public education. Historically they have relied upon others for curriculum development and upon other organizations to guide education. Yet businesses have complained about the declining quality of new employees. But that is all changing now. The National Commission on Excellence in Education created in 1981 by T.H. Bell, Secretary of Education, has awakened us all—individuals, businesses, and government leaders alike—to the crisis in U.S. education. The National Commission's report was issued in April 1983, and in its wake, approximately 15 other significant reports have been issued by a variety of concerned educational groups, including a report by the Business Higher Education Forum, entitled "America's Competitive Challenge."

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[1] Functionally illiterate is defined as the inability to read, comprehend, write and compute so as to be able to function in society. The number of Americans that cannot read even a sentence is probably in the range of 2 million to 3 million.

All agree that educational reform is now a national priority. There have been two decades of steady decline in U.S. student achievement, affecting first the primary and secondary schools, then the colleges and universities, and finally the workplace, where manpower development costs have risen while productivity has declined. Thus, what began as an educational problem has become a serious economic and social issue.

In "A Nation at Risk: The Imperative for Education Reform," the National Commission on Excellence in Education issued 38 recommendations to upgrade U.S. education. Several of the other studies elaborated or expanded on the National Commission recommendations. The major recommendations of the Commission centered on five key areas—curriculum, standards, time in schools, teaching, and educational leadership.

With regard to the curriculum, the Commission recommends that high school diplomas be granted only to those students who take, at a minimum, four years of English, three years of math, three years of science, three years of social studies, and a half year of computer science. Two years of foreign language study is also recommended for those students intending to go to college. The Commission recommends that four-year colleges raise their admission standards and notify all prospective applicants of that fact.

Time in school should be spent more effectively, as well as increased, by lengthening the school day and the school year. Japanese students attend school six days a week for eight hours a day, 220 days a year. This compares with six hours a day, five days a week, 180 days a year for U.S. students. The Commission recommends that the U.S. school day be increased to 7 hours a day and the school year be increased from 180 to 200-220 days a year. The Commission recommends that more homework be assigned, rules of conduct be more rigorously enforced, and academic progress, not age, be the basis of placement, grouping, promotion, and graduation.

The widespread agreement about the urgent need to reform our Nation's schools should make the Congress and Federal Government officials most receptive to the work and many of the recommendations of the National Commission and the 15 or so other recent study groups. We urge immediate consideration of the recommendations.

Worker Training and Retraining.—There is another education problem that needs attention, and that is worker training and retraining. As the economy undergoes major changes in technology and foreign competition, structural unemployment arises in certain industries and geographical regions and that gives rise to special training and retraining needs.

The Joint Economic Committee held four days of hearings in the Fall of 1983 which produced a substantial amount of information and a number of key recommendations on this issue. The purpose of the hearings was to determine the magnitude of the retraining problem and to examine various policies to encourage and promote it.

Special attention was paid to the Job Training Partnership Act (JTPA) of 1982. That Act is distinguished from other employment acts (CETA, etc.) by the high degree of private sector and State and local government involvement it mandates. For example, the Chairman and 51 percent of the members of the Private Industry Councils it will create will come from the private sector. The JTPA requires that 70 percent of its funds must be used for job training, rather than income support payments, and also requires that resources be used efficiently. In order to receive Federal funds, local Private Industry Councils must meet certain earning gains and welfare reduction criteria. The JTPA also emphasizes training for useful private sector jobs, not dead-end public service jobs.

A major conclusion of the JEC hearings was that future training programs should build on the Job Training Partnership Act without changing its basic approach. Congress is prone to change such laws from year to year. The recommendation of witnesses at the JEC hearings was to leave JTPA alone. Give the law a chance to work before trying some new scheme.

We also need to significantly improve labor market information on jobs and available manpower needs in each locality. The interstate job information system, under the employment service, needs to be completed and made operational.

Finally, we recommend that rather than targeting industries or technologies, we should target the "process of innovation." This is spelled out by a Steering Committee of The Task Force on High Technology Initiatives of the House Research Committee. In its May 1984 report, entitled, "Targeting the Process of Innovation," the Task Force illustrated the importance of technological innovation. But it said that Congress should not get involved in choosing between which industries are worthy of government assistance and which are not. Rather, targeting the process of innovation would create an environment which fosters new ideas, new companies, the modernization of mature companies, and achieve the objectives of economic growth and expanding job opportunities.

This can be done through a strong commitment to basic research through Federal funding of university and laboratory research. The Task Force calls for modifying the antitrust laws to permit R&D joint ventures that do not have anticompetitive effects. The Task Force has been encouraged by the lowering of the capital gains rate. Risktaking can be further encouraged by removing restrictions on the R&D tax credit, and strengthening the patent and copyright laws so that innovators can receive rewards for their ingenuity. The Federal Government can also help increase the supply of technically-trained personnel by providing tax incentives for corporate contributions of state-of-the-art equipment for educational purposes and by permitting technically trained foreign nationals who were trained here to remain here.

Finally, market opportunities can be expanded if the United States would work towards removing trade barriers, expanding GATT to cover services and investment, replacing the Domestic International Sales Corporation with new tax incentives for exports, streamlining export controls on high technology products, and reducing budget deficits (thus decreasing economic uncertainty and distortions in international exchange rates).

These actions would foster technological innovation, industrial competitiveness and thus increase job opportunities.

The Task Force Report is included in full in the Appendix at the end of this Report.

VIII. CONCLUSIONS AND RECOMMENDATIONS

In the right atmosphere, the United States can adjust to economic changes, continue to maintain its position as world economic leader, and bring rising living standards to all Americans. As we have seen since World War II, the U.S. economy has adjusted. Now, if we don't put the country into a government-directed straitjacket, it will continue to adjust. The claim of industrial policy advocates that the U.S. economy is bogged down because of inflexibility and structural rigidities is not supported by the facts of U.S. industrial performance.

The American economy is undergoing dramatic changes right now, but this is not a new phenomenon. We have seen our society change from an agricultural economy in its first century to a heavy industry-utility-dominated economy in the second century, and now we are witnessing a shift to a service-oriented, high-tech information society.

One consequence of an information-intensive economy is that manufacturing jobs, while continuing to grow in numbers, will shrink as a percent of total employment while service and high-tech jobs will expand in their share of total jobs. This has important social and public policy implications requiring an intelligent understanding of the phenomenon of structural unemployment.

The widespread use of information-age technologies holds the key to restoring the competitiveness of U.S. industries. In the process, old concepts about productivity, economic growth, and public policy must be re-examined. Understanding the nature of the information economy, technical progress and demographic changes are important because they exert a powerful and significant influence on the behavior of the economy.

In making our shifts, however, we must not just concentrate on the high-tech industries and let the old, mature industries die. High-tech alone cannot generate enough jobs to make up for the jobs that would be lost if we write off our more mature industries. Rather, we should apply high-tech and appropriate technology to the older smokestack industries as well. The shift of the service industries to more technologically intense production and delivery systems is instrumental to the long-run health of the American economy.

Structural shifts in the U.S. economy are not necessarily bad. They would be bad only if we failed to accurately perceive them and properly adjust to them. Accordingly, government policies and business practices must be accommodative, not roadblocks, if we are to achieve the rising living standards.

Let us briefly summarize the specific agenda recommended in this Report as an alternative to industrial policy. In our opinion, the government ought to target the entrepreneurial process so as to promote productivity, economic growth, and rising living standards. Specifically, government needs to:

Provide sound macroeconomic policy—both fiscal policy and monetary policy.

Vigorously pursue trade liberalization policies at home and abroad.

Promote savings and investment by continuing the tax cuts and revisions put in place in the Economic Recovery Tax Act of 1981 and in earlier capital gains and depreciation treatment.

Assess and provide an adequate public infrastructure.

Hold the growth rate of Federal outlays below the growth rate of GNP, thus reducing the size of the Federal government relative to the private sector.

Increase Federal spending for basic research. This is one of the few areas of the Federal budget that should be increased, rather than decreased.

Establish permanent R&D tax credits; and

(a) Replace the rolling base restriction with a base using 1981-1983 average R&D expenditures.

(b) Permit tax deductions for contributions of equipment for teaching science.

(c) Permit tax credits for corporate financing of vocational education science teachers.

Amend the antitrust laws to remove ambiguities as to the legality of joint venture research and development projects.

Reduce regulation, eliminate contradictory and duplicative regulations, and be as concerned about costs of compliance as about benefits when issuing regulations.

Support the work of the National Commission on Excellence in Education to upgrade U.S. educational attainment.

Provide an effective worker training program. Give the 1981 Job Partnership Training Act a chance to operate.

Improve U.S. employment service functions to provide quicker and better job availability information to improve labor mobility.

Beyond these basic fundamentals, the role of government should be quite limited. We certainly do not need the government to plan the Nation's industrial structure and determine which regions and States should grow and prosper.

When government intervenes in the economic process, contrary to what industrial policy advocates say, it destroys the vigor of free market decisions, introduces rigidities and distortions and inhibits growth. Government can be a lender to a private borrower, but as such it is an undesirable creditor because it lacks the expertise to make business investment decisions and it is generally rigidly fixed by law.

The most important contributor to economic growth, although difficult to measure, is the human factor. To economic growth, the individual brings imagination, creative effort, ingenuity, and resourcefulness. In an atmosphere of freedom, individuals express these qualities in an infinite variety of products and services. Freedom to choose is a unique characteristic of the American government which needs to be protected and expanded. The entrepreneurial explosion that we are now experiencing is direct testimony of the relationship between economic freedom and economic growth.

When the balance shifts and the power of the government rises at the expense of the freedom of the individual, private growth—healthy growth—is retarded. When government tries to substitute a centrally planned course of action for free markets, as industrial policy advocates want, it tends to produce dull mediocrity and perpetuates underproduction and overproduction of certain goods and services with rigid resistance to change. Economic growth requires a flexible environment and the willingness of businesses and individuals to change.

The industrial policy advocates are hell-bent to use more government to correct what they perceive to be the so-called structural ills of the economy. But the best thing the government can do is to pursue stable monetary and fiscal policies and the nontargeted sectoral policies discussed above. The private sector will do the rest. Our public policy program is quite simple when compared to the complex industrial policy plans discussed in Chapter III, but is more workable and more powerful.

As Congressman Daniel E. Lungren told the House Banking Subcommittee on Economic Stabilization during hearings on industrial policy, "It is the advocates of industrial policy that have the high burden of proof. It is their responsibility to show that such a drastic change in course is needed from current economic and government policy."

It became obvious in the Joint Economic Committee hearings on industrial policy that the "burden of proof" Mr. Lungren spoke of has been significantly lacking.

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APPENDIX

Targeting the Process of Innovation

An Agenda For U.S. Technological Leadership And Industrial Competitiveness

Recommendations Prepared By:
The Steering Committee of
The Task Force On High Technology Initiatives
House Republican Research Committee
U.S. House of Representatives
First Edition, May 1984

House Republican Research Committee
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Executive Summary

America's challenge today and for the future is to create enough new and satisfying jobs to employ our growing work force and to increase the standard of living for all Americans. The key to meeting this challenge is industrial competitiveness—developing and producing products and services whose quality and prices make them attractive to consumers abroad and those here at home.

Under President Reagan's leadership, the United States today is experiencing strong, broad-based economic growth. Nevertheless, some American industries have lost their competitive edge. U.S. firms have been beaten out in foreign markets, and they have lost market share here at home. This has cost American jobs.

Some suggest that this is a permanent condition. They say that America should "write off" industries that have lost ground and concentrate solely on new "sunrise" industries.

We disagree. We believe America can improve its competitiveness in those traditional industries that still have growth potential worldwide. However, to do so American industries will have to *exploit change* rather than fight it. U.S. firms will have to operate in new and better ways. They will have to offer improved products and services. They will have to find techniques to increase worker productivity and product quality. In short, American industries must apply far more technology and innovation, and they must improve the utilization of manpower.

U.S. leadership in technology and its applications has been a primary source of increased competitiveness and new jobs in the past. We must preserve our leadership. But the creation of new technologies and innovation can't be *forced*. Creative ideas, improved products, new companies, and revitalized factories don't spring from government "targeting" of technologies or industries. Rather, they are the product of individuals with vision, genius, and the courage to take risks. As such, innovation can only be *fostered* by an economic environment that encourages individuals and growth.

We believe that the proper role of government in promoting U.S. technological leadership and industrial competitiveness is to *"target" the process* by which new ideas and products are developed—*the process of innovation.* That is, our government should focus on creating an environment in this country in which innovation, new ideas, and new companies are likely to flourish and in which firms in mature industries can modernize. Making sure that such an environment exists is the best way government can help America maintain its technological leadership and industrial competitiveness.

There are four conditions needed for an environment that promotes innovation:

- *A strong commitment to basic research,* deepening and broadening our understanding of fundamental processes that will form the basis for industries, processes, and products in the future;
- *Incentives for investors, entrepreneurs, and innovators* to provide the capital and take the personal risks associated with making technological advances, developing new products, establishing new companies, and rejuvenating mature industries;
- *A strong educational capability,* particularly in the sciences, that assures an ample quantity of trained technical and managerial personnel and a broad base of educated and well-trained citizens who can meet the challenges of a rapidly changing world;
- *Expanding market opportunities,* domestic as well as foreign, which require a healthy domestic economic environment and aggressive trade policies.

Proper government policy for industrial competitiveness is one that focuses on these prerequisites for innovation. It consists of specific legislative and regulatory initiatives that foster these conditions and avoids government actions that would weaken them. The specific initiatives needed will vary as actions are taken and events unfold, but there are specific actions that can and should be taken right now.

This Agenda for U.S. Technological Leadership and Industrial Competitiveness contains 14 legislative initiatives that we believe the 98th Congress should take in 1984 to strengthen the elements that are fundamental to the process of innovation. We have limited this first edition of the Agenda to specific proposals that can and should be implemented in 1984. All of the initiatives recommended in this Agenda are designed to improve the climate for innovation. We believe each is important and would make a meaningful difference. However, we believe one recommendation—reducing the enormous projected federal budget deficits—stands out above the others in its impact. The other proposals will only be fully effective in a healthy domestic economy which cannot survive continued deficit spending of the magnitude now projected.

BASIC RESEARCH
RECOMMENDATIONS FOR 1984

- Increase emphasis on civilian basic research as recommended in the President's FY85 budget;
- Offer a 25% tax credit for corporate funding of research in colleges and universities;
- Modify antitrust laws to require that R&D joint ventures be judged by their competitive effects only and reduce the potential liability for damages from treble to actual damages.

INCENTIVES FOR RISK TAKING
RECOMMENDATIONS FOR 1984

- Make permanent the R&D tax credit and make it applicable to software and start-up companies;
- Make permanent the moratorium on Treasury Regulation Section 861.8;
- Modify antitrust and intellectual property laws to require that the courts consider the effects of competition when judging alleged patent misuse by a patent holder and alleged antitrust violations in the licensing of intellectual property;
- Permit enforcement of a domestic process patent against a product made without proper authority in a foreign country by the patented process;
- Extend intellectual property law to include semiconductor designs and masks.

PROVIDING TRAINED PERSONNEL
RECOMMENDATIONS FOR 1984

- Offer tax credits and enhanced deductions to corporations contributing state-of-the-art scientific equipment and related support services to colleges and universities for educational purposes;
- Permit foreign nationals who possess critical skills which are in short supply in the U.S. to remain and work here.

EXPANDING MARKET OPPORTUNITIES

RECOMMENDATIONS FOR 1984

- Create a new export incentive to replace the Domestic International Sales Corporation (DISC) that the U.S. has agreed to discontinue;
- Instruct our trade negotiators to seek elimination of trade barriers and extension of the GATT to cover investments and services;
- Focus and streamline export controls so they are more effective in preventing the trade-related transfer of militarily critical technologies to our adversaries while avoiding unnecessary obstacles to exports;
- Take actions to reduce substantially the projected budget deficits for FY1985 and beyond.

Enhancing U.S. Technological Leadership and Industrial Competitiveness

America's Challenge: Jobs and Prosperity

America's challenge today and for the future is to create enough new and satisfying jobs to employ our growing work force and to increase the standard of living for all Americans. The key to meeting this challenge is industrial competitiveness—developing and producing products and services whose quality and prices made them attractive to consumers abroad and those here at home.

Under President Reagan's leadership, the United States today is experiencing strong, broad-based economic growth. Nevertheless, some American industries have lost their competitive edge. U.S. firms have been beaten out in foreign markets, and they have lost market share here at home. This has cost American jobs.

Some suggest that this is a permanent condition. They say that America should "write off" industries that have lost ground and concentrate solely on new "sunrise" industries.

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U.S. Technological Leadership Has Helped Create Jobs

Over the past several years, a variety of studies have documented the importance of technological innovation to our economic growth, productivity, job opportunities, and trade competitiveness. A study by the Massachusetts Institute of Technology estimated that 80 percent of the growth in the gross national product of the United States between 1909 and 1949 was due to technological change(1). Further, a recent Commerce Department study found that during the 1970's, the productivity growth rate in high technology industries was more than six times the average of U.S. business. During the same period, employment in high technology and support industries grew more than 50% faster than the growth in total U.S. employment(2).

In recent years, while the overall export performance of the United States has not been good, exports of technology-intensive products have shown excellent growth. From 1970 to 1980, these industries increased their export surplus from $10.4 billion to $42.4 billion per year. During the same period, the trade balance of industries without technological bases declined from near zero to a negative $21.5 billion per year(3). Since each $1 billion of exports results in about 25,000 jobs for Americans, it is clear that American technological leadership in the past has enabled the United States to create many new jobs(4).

U.S. Technological Leadership is Being Challenged From Abroad

On January 25, 1983, President Reagan in his State of the Union message announced that "This Administration is committed to keeping America the technological leader of the world now and into the 21st century." This commitment by the President to spur technology may have come just in the nick of time. U.S. technological leadership has lost momentum in recent years. It hasn't been squandered like some other resources through overuse and waste. It's been frittered away through neglect.

During the 1970's, research and development (R&D) expenditures as a percent of gross national product (GNP) declined about 10% in the United States, reaching a low in 1977-78 of 2.23%. At the same time, our two most aggressive trading partners—Japan and West Germany—increased their R&D expenditures as a fraction of GNP by 20% and 21% respectively. Fortunately, the U.S. trend has reversed since 1978, and in 1983, R&D as a fraction of GNP is estimated at 2.65%—about equal to Japan and West Germany. However, since the U.S. conducts much more defense-related R&D than the other two nations, figures for *civilian* R&D are presently about 30% higher for Japan and West Germany(5).

The lower intensity of our research efforts in the 1970's appears to have contributed to a decline in our leadership in contributions to engineering and scientific advances. Domestic patenting by U.S. inventors declined by 24 percent during the period 1972-81, while U.S. patents to foreign inventors increased(6). U.S. market share of technology-intensive products also fell, from 23.1% in 1970 to 19.9% in 1980(7).

Central Planning Isn't the Answer

Due to the outstanding performance of the U.S. high technology industries plus the growing recognition that U.S. leadership in technology and its applications are being threatened from abroad, high technology and industrial competitiveness issues have been receiving considerable attention in Congress recently.

This is good, but in its enthusiasm to help, Congress must avoid the temptation of promoting direct government involvement of targeting "winners" and "losers" in American industry. The dismal results of the British experiment in central planning and the recent U.S. experience in government "assistance" to synthetic fuels, for example, should illustrate the fallacy of that approach. Still, the House Banking Committee recently passed a bill which proposes forming a Council for Industrial Competitiveness and an associated Bank for Industrial Competitiveness. These new agencies would be charged with formulating a "broad industrial strategy" by providing billions of dollars in federal funds to targeted companies(8).

We believe such a scheme would be doomed to failure. Bureaucrats in Washington, D.C. should not be given the job of picking between opportunities and dead ends. Making such decisions is hard enough for investors or managers in the private sector who are on the firing line and have much to gain or lose personally from the results. Besides, politics would undoubtedly play a major role in the decisions of the Bank and Council. The history of federal handouts indicates that the money is often given to the industries and regions who are best represented in Washington rather than on the basis of merit. A similar conclusion was reached by the Joint Economic Committee after extensive hearings were held on industrial policy last year.(9)

A recent Price-Waterhouse survey of over 400 companies—mostly small and mid-sized firms—showed that business people understand the folly of such government intervention. Less than five percent of those surveyed supported the approach of government finance banks or industrial targeting(10).

Government Should Target the Process of Innovation

The federal government can play a role in promoting U.S. technological leadership and industrial competitiveness, but we believe it should be a "targeting" of a different kind. Rather than targeting specific technologies or industries, the proper role of government is to *target the process* by which the new ideas and products are developed—the *process of innovation*. That is, our government should focus on creating an environment in this country in which innovation, new ideas, and new companies are likely to flourish and in which firms in mature industries can modernize. Fostering such an environment is the best way government can help America maintain its technological leadership and industrial competitiveness.

There are four conditions needed for an environment that promotes innovation:

- *A strong commitment to basic research,* deepening and broadening our understanding of fundamental processes that will form the basis for industries, processes, and products in the future;
- *Incentives for investors, entrepreneurs, and innovators* to provide the capital and take the personal risks associated with making technological advances, developing new products, establishing new companies, and rejuvenating mature industries;
- *A strong educational capability,* particularly in the sciences, that assures an ample quantity of trained technical and managerial personnel and a broad base of educated and well-trained citizens who can meet the challenges of a rapidly changing world;
- *Expanding market opportunities,* domestic as well as foreign, which require a healthy domestic economic environment and aggressive trade policies.

Proper government policy for industrial competitiveness is one that focuses on these prerequisites for innovation. It consists of specific legislative and regulatory initiatives that foster these conditions and avoids government actions that would weaken them. The specific initiatives needed will vary as actions are taken and events unfold, but there are specific actions that can and should be taken right now.

An Agenda for 1984

The following Agenda for U.S. Technological Leadership and Industrial Competitiveness contains 14 legislative initiatives that we believe the 98th Congress should take in 1984 to strengthen the elements that are fundamental to the process of innovation. We have limited this first edition of the Agenda to specific proposals that we think can be implemented in 1984. As such, it does not address many other important factors affecting innovation including K-12 education, worker training, employee incentives, cost of capital, and technology commercialization. Recommendations on these and other factors will be offered in future editions of this Agenda.

A STRONG COMMITMENT TO BASIC RESEARCH

America must renew its commitment to basic research. The federal government must continue to increase its funding of research carried out in universities and research laboratories. The truly basic research—such as the study of DNA that eventually resulted in gene splicing technology which spawned the genetic engineering industry—will normally not be pursued by the private sector because it is not related closely enough to specific products. Funding such research is a proper role of government. Federally funded basic research performed in America's colleges and universities also helps to train the scientists and engineers needed for teaching and future research.

We support the Administration's increased emphasis on civilian basic research in the FY85 research and development budget recommendations, and the stepped-up commitment to integrating the resulting new knowledge into the private sector.

We also believe that closer relationships between research universities and American industry should be encouraged. Closer ties would better expose researchers to the problems and opportunities that American firms face and might result in speedier application of research results to practical situations.

One way to foster better university relationships is to encourage greater corporate financial support of university research. Legislation offering a new 25% tax credit for corporate funding of research in universities and other non-profit institutions would do that. It would also reduce the enormous dependency that universities have today on federal funding of basic research.

In addition to funding basic research, Congress should clarify U.S. antitrust laws so they provide appropriate ground rules for the U.S. economy in the international marketplace now and in the future.

In the United States today, there are companies that want to engage in joint research and development ventures. Such ventures would enable the companies to pool their scarce research resources to pursue very risky or expensive projects and share in the results that are produced.

Currently, any such joint venture could be ruled a *per se* violation of antitrust law and would be subject to treble damages. The risk of antitrust suits—even when the R&D joint venture would increase U.S. competitiveness—prevents companies in the United States from pursuing important R&D projects.

Antitrust laws should be modified so that R&D joint ventures would be judged by their effects on competition as defined by case law or by legislative guidelines. Also, the potential liability for damages in such cases should be reduced from treble to single (actual) damages.

Taking unnecessary legal risks out of the formation of R&D joint ventures would permit U.S. high technology companies to undertake R&D projects that would be too risky or too expensive for a single company to pursue alone. It would also enable companies to compete more effectively against the consortiums that have long been encouraged in other countries. In addition, lessening the antitrust risk would enable the ailing companies in the so-called "smokestack" industries to work together to solve their common problems and become more competitive in world markets.

BASIC RESEARCH
RECOMMENDATIONS FOR 1984

- Increase emphasis on civilian basic research as recommended in the President's FY85 budget;
- Offer a 25% tax credit for corporate funding of research in colleges and universities;
- Modify antitrust laws to require R&D joint ventures be judged by their competitive effects only and reduce the potential liability for damages from treble to actual damages.

INCENTIVES FOR THE RISK TAKERS

In addition to basic research, the U.S. needs more incentives for the risk takers—the investors, entrepreneurs, investors, and enterprises who must take the risks of pursuing new ideas. Here, tax policy and regulatory policy play a significant role.

Tax Policy

The reduction of the capital gains tax rate, passed by Congress in 1978, illustrates the enormous impact that tax policy can have on the availability of risk capital for the financing of new ventures. In 1978, the maximum tax rate on capital gains was reduced from nearly 50 percent to 28 percent. During the eight years prior to 1978, less than $50 million in new capital was made available each year to venture capital funds investing in small companies. However, within eighteen months after the capital gains tax was reduced, $1 billion in new capital was made available to such funds. The maximum capital gains rate was lowered again in 1981 to 20 percent, and in 1983, $4.1 billion of new venture capital was made available from investors(11).

In addition to incentives for investors, the U.S. needs improved incentives for corporate risk taking. The Economic Recovery Tax Act of 1981 contained such an incentive—a 25 percent tax credit on *increases* in research and development expenditures.

This tax credit was an excellent idea. It appears already to have had a positive effect on research and development expenditures. Although the R&D credit was only partially phased-in during 1981 and 1982, a recent McGraw-Hill survey showed that despite the severe recession during that period, there was a significant increase in R&D spending during those years, making it the first post-war recession in which the pace of research spending did not decline(12).

The R&D tax credit can be an important incentive for innovation in all industries, but the restrictions that were placed on the credit by Congress and the Treasury Department have hampered its effectiveness. They have limited the credit's applicability for start-up companies and computer software, and, most importantly, the tax credit is only temporary. It expires on December 31, 1985. However, since most R&D projects are long-term in nature, a temporary R&D tax credit may not provide an adequate incentive for such projects. Congress should pass legislation this year to refine the applicability of the R&D credit and make it permanent so that companies can be assured of the credit's scope and availability when planning long-range projects.

Also, Congress should make permanent the current moratorium on the research and development portions of Section 861 of the tax code. Section 861.8 requires U.S. firms with overseas operations to allocate a percentage of their U.S. R&D expenditures against their foreign source income. This allocation, which denies U.S. firms the full tax benefits of conducting R&D in the United States, has caused U.S. multinational firms to perform more R&D abroad. Making the moratorium on Section 861.8 permanent would keep more R&D jobs here in the U.S.

Improved mechanisms are needed to attract capital to companies that have not been profitable in recent years but which could regain their competitiveness through retooling and modernization. The investment tax credit was enacted more than twenty years ago as an incentive to invest in new capital equipment. Unfortunately, it has not been effective for some of the companies that need it most. Although some companies have made large investments in capital equipment, they often have not earned sufficient profits to use all their tax credits against their liability. This increases their after-tax cost of capital and places them at a competitive disadvantage, particularly against competitors in countries where the cost of capital is lower. The Task Force will hold hearings on the capital formation problems of the ailing industries with the intent of proposing specific actions later this year to address the problems.

Patents and Copyrights

In addition to tax incentives, patent and copyright laws need to be strengthened to insure that innovators—both private and corporate—can receive fair rewards for their ingenuity. Often, the most efficient way to bring a new technology to market is by licensing that technology to others. Licensing can enable intellectual property owners to employ the capability of established enterprises to market a technology quickly and at lower cost. This can be particularly important for some small businesses that do not have the ability to develop all possible applications of new technologies by themselves.

Unfortunately, the courts have not always been sympathetic to the pro-competitive benefits of licensing. They have ruled against patent holders based on the form of their license agreements rather than their effects on competition. We believe innovation can be encouraged by modifying the antitrust and intellectual property laws to require that the effects on competition be considered by courts in cases involving the alleged misuse of a patent or copyright or involving antitrust charges stemming from intellectual property licensing.

We also recommend strengthening the protection of U.S. process patent holders by authorizing enforcement of a U.S. process patent against a product made without proper authority in a foreign country by the patented process. This is necessary because today foreign companies can use U.S. process patents abroad without authorization and then sell the resulting products in the United States with impunity.

Semiconductor circuit designs need protection from "pirate" firms—mostly overseas—which copy "chips" designed by U.S. firms. These chips have become pervasive in a wide variety of products such as automobiles, home appliances, and toys. "Pirate" firms, which don't spend money on R&D, can sell their copied products for much less than the companies that designed the products. This practice reduces the incentive for innovative companies to risk the millions of R&D dollars required for new semiconductor circuit designs. Protecting semiconductor circuit designs under intellectual property law would help innovative firms receive a fair return on their investments.

Federal Regulations

A significant portion of capital expenditures by the private sector is diverted from productive investment by regulations and government-induced delays. While many of these regulations are beneficial and necessary, they can be improved to accomplish their objectives without stifling innovation and productive investment. We support the increased use of cost-benefit analysis, risk analysis, incentive-based regulation, scientific data, and performance standards in regulatory policy and practice. In the future, we plan to offer specific proposals on reducing the regulatory drag on technological advances and industrial competitiveness.

INCENTIVES FOR RISK TAKING
RECOMMENDATIONS FOR 1984

- Make permanent the R&D tax credit and make it applicable to software and start-up companies;
- Make permanent the moratorium on Treasury Regulation Section 861.8;
- Modify antitrust and intellectual property laws to require that the courts consider the effects of competition when judging alleged patent misuses by a patent holder and alleged antitrust violations in the licensing of intellectual property;
- Permit enforcement of a domestic process patent against a product made without proper authority in a foreign country by the patented process;
- Extend intellectual property law to include semiconductor designs and masks.

AN ADEQUATE SUPPLY OF TRAINED PERSONNEL

The American educational systems should provide an adequate supply of trained people—particularly technically trained personnel. However, the future demand for engineers, scientists, and technicians is predicted to outstrip the supply. This could put the U.S. at a severe competitive disadvantage in world markets. Japan, for example, with half the population of the U.S., is training about the same number of bachelor-level engineers per year as the United States. An American Electronics Association (AEA) survey predicts that there may be a shortage of about 16,000 new electrical engineers and computer scientists per year for the next few years(13).

Although there are improvements needed at all levels of our educational system—pre-college, college, vocational, continuing, and worker retraining—we believe the most critical education roadblock to innovation today stems from a lack of capacity in our university science and engineering departments. This is due to the high cost of educating technical people. Universities struggle to attract enough qualified professors because industrial salaries are so attractive. As a result, there are currently some 1400 unfilled faculty openings in U.S. engineering schools(14). Sadly, 67 percent of the engineering student applicants are turned away(15). Also, most schools can't afford to buy all the up-to-date equipment needed to train engineers and scientists.

Private industry has an important role to play in funding technical education programs. The AEA and the Massachusetts

High Technology Council, for example, have already established industrial giving programs to collect money from corporations for faculty salaries and equipment.

The federal government has a role to play, too. Tax credits and enhanced deductions for corporate contributions of state-of-the-art equipment and support services for educational purposes should be offered. Such incentives would encourage more private sector support for increasing the capacity of our technical education facilities without requiring a new federal bureaucracy to carry it out.

U.S. immigration policy should also recognize the need for trained technical people. In particular, a high percentage—30% to 50%—of graduate engineering students are foreign nationals. Students who develop technical skills that are in short supply in this country should be permitted to remain here. Immigration reform legislation should continue to permit technically trained foreign nationals to remain in this country to contribute to U.S. technology rather than requiring such students to return to their home countries after receiving their education in the U.S.

We recognize and are concerned about the plight of workers who are unprepared for the changes and new jobs that will be created by advances in technology. The Job Training Partnership Act, which went fully into effect on October 1, 1983, was designed to address this problem. We will be evaluating its effectiveness and will report on its performance as well as suggesting improvements and other job training initiatives in future editions of this Agenda.

PROVIDING TRAINED PERSONNEL
RECOMMENDATIONS FOR 1984

- Offer tax credits and enhanced deductions to corporations contributing state-of-the-art scientific equipment and related support services to colleges and universities for educational purposes;
- Permit foreign nationals who possess critical skills which are in short supply in the U.S. to remain and work here.

EXPANDING MARKET OPPORTUNITIES

Even if the United States has a strong research base, incentives for risk-taking, and well-trained people, innovation and the creation of new jobs will be stifled unless there are attractive business opportunities at home and abroad. That means America must have a strong domestic economy, and U.S. businesses must have access to foreign markets. Government can play an important role in fostering both.

The United States should vigorously pursue a trade policy aimed at achieving free and *fair* trade. The U.S. should negotiate in a tough-minded fashion to break down the trade barriers erected by our trading partners so that American companies can compete on a level, two-way street.

In working to remove trade barriers, we should strive to strengthen the General Agreement on Tariffs and Trade (GATT), the multilateral organization which has done so much in the past to liberalize trade among the nations of the world. In addition, the role of the GATT should be expanded to cover services and investments—two areas of growing importance in today's world. Negotiating with our trading partners to modify the GATT to provide coverage of services and investments would help to improve our balance of payments and protect U.S. investors from damaging interference by foreign governments.

In addition to negotiating for a fair trading environment, government policy should encourage exports by U.S. firms, particularly small businesses. Tax incentives (like the Domestic International Sales Corporation which permit the deferral of taxes on profits from export sales) should be provided to encourage and help finance experts.

Export controls on high technology products should be focused and streamlined to prevent the trade-related transfer of militarily critical technologies to our adversaries while, at the same time, making exporting easier for U.S. companies. Likewise, restrictions on exports to achieve foreign policy goals should be implemented only after carefully considering existing contracts and determining whether they can be effective in light of the availability of the products from foreign sources.

Most importantly, U.S. businesses can achieve their full potential to create jobs if they operate within a healthy domestic economic climate. People are less willing to invest, make long-term business commitments, and borrow the funds needed for expansion when there is uncertainty about the direction of interest rates and inflation.

Congress and the Administration should act with a sense of urgency to reduce significantly the enormous projected budget deficits which are a source of economic uncertainty and distort international exchange rates in a way that damages U.S. export opportunities. We believe reducing the deficits requires a monetary policy that accommodates economic growth, a tax policy that encourages savings and investment, and the discipline to curtail the growth of spending. Only then can innovation flourish, mature industries be rejuvenated, and prosperity be sustained.

EXPANDING MARKET OPPORTUNITIES
RECOMMENDATIONS FOR 1984

- Instruct our trade negotiators to seek elimination of trade barriers and extension of the GATT to cover investments and services;
- Create a new export incentive to replace the Domestic International Sales Corporation (DISC), which the U.S. has agreed to discontinue;
- Focus and streamline export controls so they are effective in preventing the trade-related transfer of militarily critical technologies to our adversaries while eliminating unnecessary obstacles to exports;
- Take actions to reduce substantially the projected budget deficits for FY 1985 and beyond.

Conclusion

We have necessarily focused this Agenda on conditions we believe will foster innovation and maintain the U.S. leadership role in technology and industrial competitiveness. This will increase job opportunities and the standard of living for Americans. In addition, it must be emphasized that with a strong, vibrant industrial base, America can lead the quest of peoples throughout the world for increased standards of living, better education, improved health, and more productive jobs.

Technology and innovation are perhaps our nation's greatest strengths. They must be preserved. However, innovation cannot be *forced*. It can only be *fostered*. It is fostered by creating an environment that emphasizes freedom of scientific and industrial activities and that offers incentives to the innovators, entrepreneurs, and investors who have the talent and resources to advance and apply technology. It is fostered by a thorough understanding of fundamental scientific processes and by a population that is well-educated in science and its application. It is fostered in a healthy economic environment and by trade policies that provide expanding market opportunities for our technology and basic manufacturing companies. Promoting such an environment should be a primary policy objective of the United States.

It is to that goal that this Agenda for U.S. Technological Leadership and Industrial Competitiveness is dedicated.

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Footnotes

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